

## Benson Declares He Has No Plans To Resign Post

By JOHN CIPPERLY

Croplife Washington Correspondent

WASHINGTON, D.C.—Ezra Taft Benson, exuding confidence last week in his present status with the Eisenhower Administration, declared emphatically that he is resolved to remain in his present cabinet post and also stated in effect that he was prepared to go before Congress to defend his past farm policies and to urge that the Congress accept his proposals.

Keynoting what those policies will  
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## Anhydrous Meeting And Trade Show Set at Little Rock

LITTLE ROCK, ARK.—The growing use of anhydrous ammonia will be a theme of the seventh annual convention and trade show of the Agricultural Ammonia Institute, to be held at Hotel Marion here on Dec. 11-13.

In addition, the producers, distributors, equipment manufacturers and users of ammonia who make up the Institute will discuss new technology and uses of the gaseous nitrogen in a series of forum discussions presided over by leaders in the industry.

Jack F. Criswell, executive vice president of the Institute, with offices in Memphis, said agricultural use of ammonia for the year ending June 30 may have exceeded last year's figure of 460,000 tons, and will approximate 25% of the total nitrogen used for direct application. In 1950, the total was less than 72,000 tons for the then infant industry.

Fred Stewart, a distributor from Santa Paula, Cal., is president of the Institute this year, and will preside at all convention sessions.

## Fire Destroys Part Of G.L.F. Building

BIG FLATS, N.Y.—Fire destroyed the main section of the G.L.F. insecticide and farm chemicals building here recently.

All materials and equipment in the section were lost, and only the brick walls of the 95 ft. by 60 ft. section were left standing. The unit contained manufacturing, packaging and warehousing space, and the office.

Packaging and office have been set up temporarily in the old G.L.F. egg station nearby. Engineers will determine if foundations and walls of the burned plant are still usable. After their survey, a decision will be made on whether the operation should be relocated, according to E. J. Smith, soil building production manager.

A brick fire wall with a double fire door stopped the fire from spreading to a 40 ft. by 60 ft. mixing and blending section of the plant. The new fertilizer plant nearby was undamaged.

Grange League Federation Insurance Co. gave this report on the fire: Xylene, a solvent more inflammable  
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## New Control Methods, Insect Resistance Discussed by ESA

MEMPHIS, TENN.—Hundreds of professional entomologists and numerous representatives of the pesticide trade were on hand to exchange information at the fifth annual meeting of the Entomological Society of America held at the Peabody Hotel here Dec. 2-5. The occasion also marked the 69th anniversary of the former American Association of Economic Entomologists and the 52nd anniversary of the former Entomological Society of America, the two groups from which the present ESA was formed five years ago.

The Cotton States Branch of the national society held its 32nd annual meeting at the Peabody in connection with the convention of the parent group.

Technical papers covering a broad scope of entomology were presented

at the Memphis meeting. Reports were given on experiments and tests made during the past year and in some cases for the past several seasons. Speakers representing state and federal agencies, the industry and many land grant colleges appeared. H. M. Armitage, University of California, president of the ESA, was co-chairman of the opening sessions, with Dr. R. L. Metcalf, head of the department of entomology, University of California, Riverside, president-elect.

Sections of the meeting encompassed many aspects of entomology, from taxonomy and ecology, through medical and veterinary entomology, physiology and toxicology, extension work, teaching, and regulatory entomology.

Alfred C. Dowdy, department of entomology, Michigan State University, related experiences gained during the 1957 season in searching for "all purpose" fruit sprays. It was the third consecutive season in the tests, he said, and the sprays were evaluated on a grower-trial basis in Michigan. Various dust and spray formulations and several pieces of spraying and dusting equipment suited to back yard plantings were included in the 1957 program. Cooperation in achieving several objectives of the program was carried on between research and extension personnel of four subject-matter departments and county extension agents, Michigan State University.

Some 15 commercial formulations, 8 experimental insecticide-fungicide combinations and 10 different types of application equipment underwent trial, he said. Most outstanding chemicals tested to date include insecticides, Sevin, malathion, and methoxychlor; and fungicides, Cyrex, captan, ferbam, and glyodin, it was reported.

That the spotted alfalfa aphid in the future may be a pest only periodically was predicted by R. C. Dickson who reported on "Four Years With the Spotted Alfalfa Aphid." He said that this pest, the third Therioaphidine species to be introduced into North America from Eurasia, infests clovers. "Populations were very high when it was first introduced," he recalled, but control methods included.

(Continued on page 17)

## Commercial Corn Production Allotment Set at 38.8 Million Acres by U.S. for 1958

WASHINGTON—The U.S. Department of Agriculture has announced an allotment of 38,818,381 acres for the 1958 corn crop in the 932-county commercial corn-producing area in 26 states. The 1957-crop corn allotment was 37,288,889 acres in a 24-state and 894-county commercial area.

While 38 counties have been added to the commercial area for 1958, the 1957 area as a whole does not lose allotted acreage as a result of these additions. Corn figures used in the legal formula for determining the corn acreage allotment are adjusted upward to compensate for the new counties added to the commercial area.

The 1958 allotment is slightly more than 4% larger than in 1957, but most of this increase is acreage for the new counties. As a result, the

share of the allotment for most states is little changed from 1957. (See table on page 20.) The extent of adjustment for individual counties and farms will vary because of acreage trends, crop-rotations, and other factors.

Largely as a result of the first full year's operation of the Soil Bank, corn plantings in 1957 in the 1957 commercial area decreased to 52,733,620 acres as compared with 1956 plantings of about 57 million acres. However, 1957 plantings were well above the 1957 commercial area allotment of 37,288,889 acres.

The Secretary of Agriculture is required by law to proclaim a corn acreage allotment for the commercial corn-producing area not later than Feb. 1, unless he dispenses with allotments under emergency powers. The coming year will be the fifth consecutive year that corn acreage allotments have been in effect.

The national corn acreage allotment of 38,818,381 acres has been determined for the 1958 crop year in accordance with a legal formula based on estimated corn supplies for the 1958-59 marketing year.

Record supplies (4,691 million bushels) of corn available for the current marketing year (1957-58) will result in making a record carryover, now estimated at 1,450 million bushels for Oct. 1, 1958, available for the 1958-59 marketing year.

The law provides for determining a "normal" supply of corn as a basis for establishing the production needed for the marketing year. The normal supply of 3,749 million bushels indicated for the 1958-59 marketing year is based on domestic consumption of 3,075 million bushels for do-

(Continued on page 20)

## RUTGERS CONFERENCE TOLD:

## More Labeling, Not Less, in Sight for Pesticide Industry

NEW BRUNSWICK—More labeling rather than less is in the future of the pesticide industry, according to a U.S. Department of Agriculture spokesman at the annual Rutgers University pesticide dealers' conference here recently.

Justus Ward, chief of the Pesticide Regulation Section Plant Pest Control Division, Agricultural Research Service, discounted the sometimes heard opinion that "nobody reads the label any more."

Doctors and public health officials have contributed figures to show that drugs that are not labeled are responsible for more deaths than poisons which are labeled, he said. Also to blame for many casualties are solvents such as kerosene and gasoline and commonly-used household products such as spot removers.

"Labeling as a precaution has meant something and we have vital statistics to prove it," said Mr. Ward.

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## Control of Cotton Disease Subject for Conference

MEMPHIS, TENN.—What can be done to fight cotton diseases which cause cotton growers an average loss of approximately a million and a half bales each year will be one of the questions explored at the Beltwide Cotton Production Conference here, Dec. 12-13. The conference is being sponsored by the National Cotton Council and other groups.

Discussing what goes into the making of a good cotton disease control program will be Harlan E. Smith of the Texas extension service, College Station. He will describe the elements of a program that is effective, practical, and economical, and outline the educational approach necessary in making effective use of the knowledge available.

Another scientist at College Station, Dr. Luther S. Bird, will tell of the developments in "in-furrow" treatment for cotton disease control.

In recent years, researchers have been testing in-furrow application of

fungicides as a means of enlarging the protective zone around young cotton plants. Although earlier results were somewhat erratic, recent developments look promising for controlling seedling diseases.

Joining the Council in sponsoring the conference are Cotton Belt land-grant colleges, U.S. Department of Agriculture, agricultural chemical industry, farm organizations, and other groups.

## Helicopter Spraying

PORTLAND, ORE.—What was reported to be a first attempt to spray weeds in Willamette valley strawberries with a helicopter recently took place on the Joe Kim strawberry planting at Harry Parks' place on Troutdale road near Gresham. J. Fremont Sprowls, Gresham, Multnomah County agent, said spray coverage appeared to be very good on a field having plenty of weeds growing from among plants and in the rows. An acre of land was sprayed in 10 minutes.

## Dow Chemical Opens Hong Kong Sales Office

MIDLAND, MICH.—A new foreign sales office in Hong Kong has been opened by Dow Chemical International Limited, an export subsidiary of the Dow Chemical Co. Eric C. Huggins has been appointed manager of the new office. Mr. Huggins, who has been associated with Dow for nine years, recently served as Far Eastern plastics sales manager with the company's Tokyo, Japan, sales office.

At the same time the export company announced the appointment of Howard C. Visger as manager of the Tokyo office. He succeeds the late H. Lee Clack. Dow said that steadily increasing exports of industrial and agricultural chemicals, plastics and other allied products to the Far East prompted the opening of the sales facility in Hong Kong. In addition to the two Far Eastern offices, Dow maintains a resident sales supervisor in Sydney, Australia.



F. Todt Tremblay

## F. Todt Tremblay In NPFI Pacific Northwest Post

WASHINGTON — F. Todt Tremblay of Seattle, Wash., has been named Pacific Northwest representative of the National Plant Food Institute, for the states of Idaho, Montana, Oregon and Washington, with headquarters in Seattle.

The appointment of Mr. Tremblay was made by Dr. Russell Coleman, executive vice president of the Institute, effective Dec. 1, 1957. Mr. Tremblay will have specific responsibilities for conducting the Institute's expanded program of research and education in the Pacific Northwest.

For the past five years, Mr. Tremblay has been manager of the fertilizer and farm chemicals department of the Washington Co-Operative Farmers Assn., during which time he helped initiate the production of field corn on a commercial basis in the irrigated areas of eastern Washington.

Mr. Tremblay received his bachelor of science degree at the University of British Columbia, where he majored in soils and chemistry. He earned his master of science degree at the State College of Washington in soils and plant physiology.

For eight years he was a soil scientist with the Western Washington Experiment Station, where he did work in field research on soils and crops with special emphasis on rates, ratios and placement of fertilizer for all major crops in western Washington. While at the station, he initiated a program of leaf analysis.

He is a member of the Pacific Northwest Soil Improvement Committee; board of directors of the Western Washington Reclamation Institute; Agronomy Advisory Board, State College of Washington; and the Seattle Agricultural Round Table.

Among Institute members with manufacturing facilities in the Pacific Northwest are the Anaconda Co., Anaconda, Mont.; Lynden Department Store, Inc., Lynden, Wash.; Magnolia Fertilizer Co., Seattle; Pacific Supply Cooperative, Portland; Phillips Petroleum Co., Pasco, Wash.; J. R. Simplot Co., Pocatello, Idaho; Stauffer Chemical Co., Tacoma, and Yakima Valley Spray Co., Yakima, Wash.

## Oklahoma Meetings

STILLWATER, OKLA.—A series of local fertilizer dealer meetings is being completed this week in Oklahoma. Sessions will be held Dec. 10 in Vinita, Dec. 11 in Durant and Dec. 12 in Chickasha. Meetings were held last week in Guymon, Woodward and Enid. The meetings are being sponsored by the Oklahoma Crop Improvement Assn. and Oklahoma State University.

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## WEED RULING

PORTLAND, ORE. — If certain weeds are named in the declaration by the county court as authorized under the county weed control act, the county court or the county weed inspector can require a property owner to control or eradicate such weeds before they go to seed, Robert Thornton, Oregon attorney general, has ruled. The request for the opinion by state Senator Truman Chase was made because some persons had interpreted the law to mean that no control or eradication measures would be taken until weeds had gone to seed. Mr. Thornton further ruled that the control or eradication measures may be required at any time, when in the opinion or judgment of the county court or the weed inspector such methods or measures will be the most effective and practical and can be accomplished with the least injury to the land or crops.

## California Sales Show Third Quarter Increase

SAN FRANCISCO—Sales of commercial fertilizers in California climbed by almost 20% between the third quarters of 1956 and 1957, according to a preliminary report issued by the Bureau of Chemistry of the California State Department of Agriculture.

Reaching a high of 216,479 tons, fertilizers rose more than 35,000 tons from the 1956 figure of 181,386. Total for the three quarters in 1957 was 879,963 tons, up about 7½% from the previous year's three quarter total of 820,763. The heavier late in the year gain may be due in part to greater stress being laid recently on fall fertilization.

Mixed dry fertilizers again led the list as the most popular group of fertilizers, but its relative gain was less than several others moving up fast. This group increased from 43,350 tons to 46,180, with ammonia solution 20-0-0 moving into a close second, up from 33,095.

Anhydrous ammonia gained some 40% approximately, by increasing sales from 15,890 to 27,296 during the July 1 to Sept. 30 period, thus gaining third position. In fourth place was ammonium sulfate, up from 17,831 to 24,119. Liquid mixed fertilizers ran fifth, gaining from 11,198 tons to 14,112, while sixth place was held by superphosphate normal, the only significant decline in the group, dropping from 12,945 to 10,239.

Other popular fertilizers include ammonium phosphate sulphate, down from 9,184 to 8,310; ammonium nitrate solution 20-0-0, up from 4,854 to 6,509; ammonium nitrate, holding practically steady at 6,063 and 6,068; superphosphate treble, up from 3,964 to 6,032, and sewage sludge activated, up from 3,939 to 5,207.

Breaking down to dry-mixed group, 10-10-10 moved into top position, gaining from 4,492 to 6,743, to replace 10-10-5, down from 6,687 to 4,553 tons.

Other good selling mixers were 16-20-0, increasing some 170% from 1,067 to 2,708; 17-7-0, down from 3,707 to 2,334, and 4-4-2, up from 1,615 to 2,211.

Agricultural mineral sales were down during the third quarter of this year, dropping to 139,871 tons from the corresponding quarter's total of 151,654 during 1956. Total sales for the two nine-month periods were almost even, dropping less than ½% from 500,121 in 1956 to 498,492 so far this year.

Gypsum was down for the two corresponding quarters from 128,979 to 121,386; sewage sludge practically unchanged, from 7,470 to 7,479; and calcium carbonate suffering a loss from 5,583 to 1,679.

## North Dakota Conference Set

FARGO, N.D.—A one day conference on fertilizer use and results of research involving fertilizers is scheduled for the annual North Dakota fertilizer dealers' session at N.D. Agricultural College, Dec. 11.

"Factors Which Involve Farmers' Fertilizer Practice" is the subject of W. R. Allstetter, vice president of the National Plant Food Institute, and "The Role of Fertilizer in Crop Production in Manitoba" will be discussed by R. A. Hedlin of the department of soils of the University of Manitoba.

Soil testing to improve fertilizer use, whether to use nitrogen fertilization in fall or spring, results of fertilizer tests on 1957 TVA test demonstration farms, recent findings in fertilizing corn, and alternatives in meeting fertilizer recommendations will be discussed by North Dakota Agricultural College staff mem-

bers of the soils and agricultural economic departments. There will be general discussion periods both morning and afternoon.

The meeting is for farmers and fertilizer dealers of the area. A series of half-day meetings for fertilizer dealers and farmers is scheduled in Devils Lake Dec. 13, Dickinson Dec. 19, Mandan Dec. 20, and Minot Dec. 27. All start at 1:30 p.m.

## Aerial Spraying Grows In Rio Grande Valley

MERCEDES, TEXAS—Lower Rio Grande Valley cotton growers are tending to spray their crop from the air rather than dust it as in the past says Lloyd P. Nolen, operator of the Mercedes Dusting Service. The trend was even more noticeable this past season than before, he said.

The wind movement in this coastal area is a consideration. Spray applications are not confined to the low-wind, dewy hours of the early morn-

ing and cannot be blown from the plants, Mr. Nolen said.

Aerial application of insecticides this summer played an important part in the insect control program and customers in this mid-Valley area averaged eight applications and a total investment of \$20 an acre.

## North Central Weed Conference Plans Set

AMES, IOWA—About 1,000 people are expected to attend the North-Central Weed Control Conference in the Des Moines Veteran's Auditorium Dec. 10-12, according to E. P. Sylwester, extension weed control specialist at Iowa State College.

Dec. 12, is "Farmers' Day," with discussions aired at weed control in major Iowa crops. Other sessions will include weed control in lawns, farm ponds and lakes, industrial areas and highway right-of-ways. Chemical and equipment businesses will have 24 displays in the auditorium.

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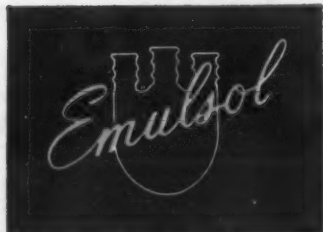
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## INSECT AND PLANT DISEASE NOTES

### Corn Borer Population Up in Kansas Fields

MANHATTAN, KANSAS—Second brood European corn borers populations are up sharply in northeast Kansas over last year, and probably are as high as at any time since 1949, according to C. C. Burkhardt, entomologist at Kansas State College, Manhattan.

Plant infestations in Jefferson County increased from 36% the fall of 1956 to 60% this fall. In comparison with last year, Jackson County infestation is up from 15 to 70%; Atchison County from 25 to 79%; Leavenworth County from 44 to 86%; and Douglas County from 26 to 83%.

An intensive study of corn borer populations in Jefferson County has

been underway for the past three seasons, with four surveys every year. The early spring survey revealed an average winter mortality of 79%. Only two larvae were found in the late spring survey, taken to indicate the potential for the first brood infestation. A mid-summer survey to learn extent of infestation and borer populations showed only 46% of the Jefferson County fields infested with first brood borers, with an average plant infestation of 22%. In the most recent survey second brood borers were found in all fields surveyed, with 60% of the plants infested.

Higher percentage of borer infestation is found in fields of the better farmers who fertilize and irrigate extensively, because the more vigorous

plants attract a larger number of moths, Mr. Burkhardt said. He also noted that plants grown under these conditions have increased vigor, and are able to tolerate more infestation.

Though farmers are more familiar with the mechanical losses caused by the second brood, Mr. Burkhardt said the first brood causes the major losses, due to damage to the young corn. There is an estimated three per cent loss per borer per stalk.

### Fewer Grasshoppers in Prospect for N. Dakota

FARGO, N.D.—Farmers in North Dakota are in for less grasshopper trouble in 1958 than was experienced in 1957, according to results of fall grasshopper surveys recently completed in all counties in the state.

Light infestations of hoppers still are indicated for most of the state, however, says Wayne J. Colberg, extension entomologist, NDAC. But the areas of severe infestations

have pretty much disappeared, or at least have become smaller. This is true especially of the rangeland infestations.

Several factors contributed to the general decrease in grasshopper numbers. Probably the most important Mr. Colberg believes, was the weather. The cool, wet fall was not favorable for heavy egg laying. Also, the extensive spraying program carried out in 1957 helped reduce the number of grasshoppers to lay eggs.

Nearly 1½ million acres of cropland, rangeland and roadsides in North Dakota were sprayed for grasshoppers early in the season. The early spraying of roadsides and field margins paid off in reduced costs for control and prevented extensive crop damage. Grasshopper control will be needed in 1957 over a wide area of the state.

### Tropical Mite Hits Tomatoes in Texas

WESLACO, TEXAS—The tropical mite became a major pest of tomatoes in the Lower Rio Grande Valley this season. The mite was found for the first time in numerous tomato fields in the Valley in May, 1956, according to a report by Dr. George Wene in the Journal of Economic Entomology.

Heavy infestations killed tomato plants in many fields. Light infestations on tomato plants resulted in little or no leaf discoloration with practically all of the mites on the leaves. This season the mite was more extensively found.

### USDA Plans to Wipe Out Two Insect Pests

WASHINGTON, D.C. — Plans for an attack to eventually wipe out two of the most costly insects that plague agriculture in the South—the imported fire ant and the screwworm—have been developing between USDA and state agencies. Funds for this purpose were made available by the 85th Congress.

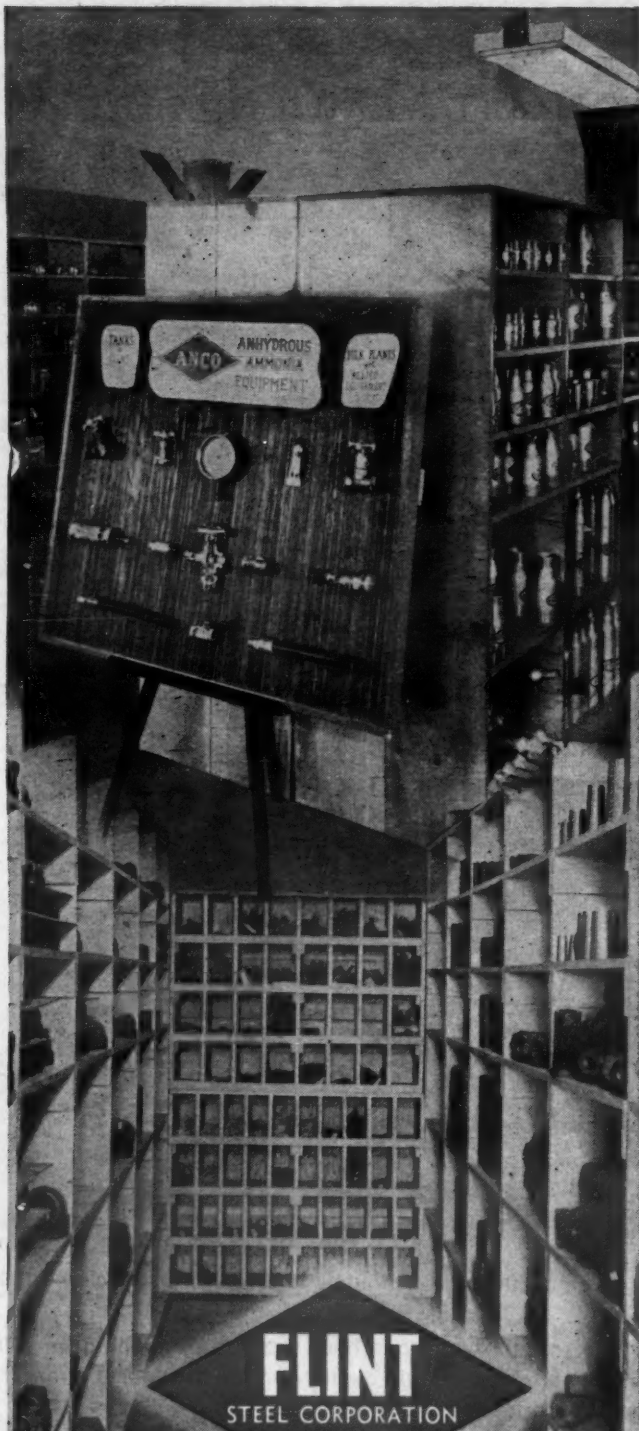
The attack already is underway against the imported fire ant, a pest that infests more than 20 million acres in Texas, Alabama, Mississippi, Louisiana, Florida and Georgia. Isolated infestations exist or have been eradicated in North Carolina, South Carolina, Arkansas and Tennessee. The imported fire ant is harmful to crops, livestock and humans.

Most effective time for field operations against the fire ant is from November to April. Every effort is being made to carry on an aggressive eradication program at the optimum time within the limits of funds available to USDA and from states, local agencies, and property owners.

To stamp out the fire ant, which may take 3 years or more in a given area, all infested lands will need to be treated, regardless of ownership or use. Insecticides effective against fire ants include dieldrin and heptachlor. Chlordane is effective but requires twice as much to kill the pest and has less residual value under most conditions. Application will be by aircraft, motorized ground equipment and hand applicators.

The screwworm, a pest that causes heavy losses among livestock and wildlife, will be attacked in Florida and parts of Georgia, Alabama and South Carolina. Male screwworm flies sterilized by gamma rays from radioactive cobalt will be used. When normal screwworm females, which mate only once, mate with sterile males their eggs do not hatch. Feasibility of the method was shown by field tests on the Island of Curacao and in Florida this past summer.

Before an all-out screwworm campaign can begin, mass-rearing facilities for flies must be prepared. With both the screwworm and the fire ant quarantines will be needed to protect areas cleared of the pests and to keep them from spreading.



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### Gypsy Moth Program in New Jersey Successful

TRENTON, N.J.—The USDA-New Jersey cooperative effort to eradicate gypsy moth from a 190,000-acre section of the state, has been termed "completely successful" by Frank A. Praci, director of the division of agriculture of the N.J. department of agriculture. The spray program, which aroused the ire of some property owners, will not have to be repeated in 1958, it is stated, although it may be necessary to treat some small localized areas.

Moth traps set in the 190,000-acre area of New Jersey have failed to reveal a single moth in the entire section, and only three moths have been recovered from the entire two million acres of the over-all program.

This summer, forty-five hundred traps, baited with a substance attractive to the male gypsy moth, were placed throughout two million acres of northern New Jersey. The traps, serviced every 10 days, were so distributed that any moth emerging would come within the influence of at least one of them. The three moths caught were located in Mendham and Long Valley in Morris County and in Clinton in Hunterdon County, all locations well outside of the area sprayed with insecticide this spring.

Intensive scouting operations are being conducted this fall and winter to locate the egg masses responsible for the emergence of the moths this year. The location and extent of next year's spray operation will be based on results of this survey.

The gypsy moth is the most destructive of all eastern hardwood forest pests. The larvae of the insect feed on the leaves of oaks, birches and other trees, particularly hardwood species, causing defoliation, weakening and sometimes death of the trees. Millions of board-feet of valuable timber are lost annually in the 40-million acre section of the Northeast where the gypsy moth is established.

In addition, defoliation by the gypsy moth permits the forest floor to dry out, the rain to run off rapidly, and the topsoil to wash away, with resultant lowering of the water table. Food for wildlife is depleted, wildlife habitats destroyed, and the recreational value of forested areas is lost.

In New Jersey, eradication measures were undertaken before the gypsy moth had an opportunity to build up in numbers or to do any substantial damage, the department of agriculture states.

### Corn Borer Count Down in Louisiana Survey

BATON ROUGE, LA.—European corn borers were found in five north-east Louisiana parishes in 1957, the first year in history that the pest has been discovered in the state. It was estimated that in other areas of the United States in 1954, European corn borers caused damage equal to about even per cent of the national corn crop. Farmers are urged to report suspected infestation during the 1958 season to the county agent for identification and for advice on control of the insects.

### California Farm Chemical Industry Has Biggest Year

SAN FRANCISCO—The agricultural chemical industry generally enjoyed its biggest year in California during 1956, according to Robert Z. Rollins, chief of the California Bureau of Chemistry.

In the annual report of the bureau for 1956, issued recently, Mr. Rollins shows that more fertilizers and pesticides were sold or registered in the state during the year; there was a greater number of firms registering

to sell these products; and the number of acres treated by aircraft in the control of pests and diseases was the greatest in the history of the industry.

Total tonnage of commercial fertilizers sold was up 8% over 1955 to a record 1,052,124 tons, with ammonia solution 20-0-0 showing the greatest single increase, and accounting for about one fifth of the total tonnage.

Mineral sales were up to 812,597, the highest except for the record year of 1952; there were a total of 11,904 pesticides registered for sale in the state, as compared with 11,587 during 1955, the previous record high; and the number of acres treated by aircraft was up almost 20% from 4,853,462 during 1955 to 5,611,000 last year. The gain in ten years is close to 1,000%. In 1947 there were only 614,348 acres treated by aircraft.

The number of firms selling commercial fertilizers was at the all-time high of 372, as compared with 345 in 1955, and about half the num-

ber, or 185 in 1947. A total of 993 companies were registered to sell pesticides, gaining from 972 in 1955 and 781 in 1947. Firms selling agricultural minerals were off 2%, dropping from 173 to 169 between 1955 and 1956, but were up from 148 in 1947.

There were 2,737 persons licensed to sell fertilizers, up by 15 over 1955; a total of 1,296 agricultural pest control operators were licensed, a gain of 58. The bureau issued 446 new certificates of qualification to pilots operating aircraft, about the same number issued during previous years; and there were 153 apprentice pilots named, compared to 111 in 1955.

Pesticides caused only ten deaths in the state during 1956, eight being children who were allowed to reach the chemicals. There were only ten cases of crop damage caused by 2,4-D drift reaching susceptible plants. One complaint of pet poisoning from snail bait and two cattle deaths from herbicides were noted in the report.

### Tennessee Opens New Soil Test Laboratory

NASHVILLE, TENN.—A new soil testing laboratory is being operated here by the University of Tennessee agronomy department, according to Dr. William D. Bishop, extension agronomist.

"The new laboratory has been designed to give more accurate results and faster service on samples received from farmers," Dr. Bishop said. "The latest equipment has been purchased so that soil samples might be tested as accurately as possible. The laboratory can handle as many as 2,000 samples a day."

Dr. Bishop has urged Tennessee farms to make use of the soil testing service as "the surest method to determine the amount and kind of lime and fertilizer to use."

Soil sample cartons, record sheets and assistance in taking samples are available at all county extension agent offices.

## IMPORTANT NEW PESTICIDE NOW READY FOR COMMERCIAL USE

# Phosdrin<sup>®</sup> insecticide

This new phosphate chemical gives excellent foliage insect kill even within a few days of harvest—  
**WITHOUT LEAVING TOXIC RESIDUES**

Remarkable new Phosdrin insecticide is now available for commercial application for foliage insect control. Phosdrin insecticide, an organic phosphate, can be applied up to one day before harvest on many crops . . . within a few days on others, and leaves no harmful residue. It gets fast kill on insects, then rapidly decomposes into harmless compounds.

Phosdrin insecticide is available as emulsible concentrate, spray and dust. It can be applied with hydraulic sprayers, low-volume or speed ground applicators and aerial sprayers in custom applications.

Here is a list of the *all-important* crops and insects on which Phosdrin insecticide is effective:

FRUITS	apples	peaches	pears	plums	strawberries
VEGETABLES	broccoli Brussels sprouts cabbage cauliflower	collards corn kale lettuce	peas pea vines potatoes mustard greens	spinach tomatoes turnips turnip tops	
FIELD AND FORAGE		alfalfa		clover	sorghums
FOLIAGE-DESTROYING INSECTS	aphids mites cabbage loopers corn earworms		cutworms (climbing) false chinch bugs grasshoppers dipterous leafminers imported cabbageworms	lygus bugs leaf hoppers red banded leaf rollers salt-marsh caterpillars strawberry leaf rollers	

Endrin and Phosdrin insecticides make a perfect combination for many spray schedules. Long-lasting endrin can be used up to the recommended period before harvest . . . then Phosdrin insecticide takes over to protect the crop, in

many cases even up to the day before harvest. This season include Phosdrin insecticide in your formulations and recommendations. You'll get more customer satisfaction and confidence. Technical information is available. Write to:

## SHELL CHEMICAL CORPORATION

Agricultural Chemical Sales Division  
460 Park Avenue, New York 22, New York



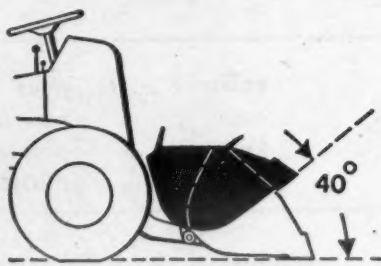


"...\* moves more material...  
cuts rail-car unloading time...  
keeps floors cleaner..."



### \*40° ROLL-BACK AT GROUND LEVEL

Develops powerful digging force — brings bucket close to machine for maximum stability and carrying capacity, and least spillage loss while transporting loads.



Magee Co-op, a chemical fertilizer manufacturer at Magee, Miss. have been using "PAYLOADER" tractor-shovels for fifteen years to unload rail cars of raw materials and to move fertilizer for bagging and unloading operations. They recently added a new-style model HA "PAYLOADER" to their fleet, and Mr. O. M. Ainsworth, the Plant Superintendent is pleased with its performance as he reports:

*"We have been using Houghs for about 15 years and the success we have experienced with them was our reason for buying the new-style model HA 'PAYLOADER'. It has increased production load delivery, matching older, larger tractor-shovel on the same job. New design roll-back bucket action has cut rail car unloading time, keeps floors cleaner, moves more material."*

Chemical and fertilizer plants of all kinds and sizes report the same kind of superior performance from their new-style "PAYLOADER" tractor-shovels—the greater digging power and carrying capacity of the roll-back bucket action, the reduction of spillage loss with the hydraulic load shock-absorber, lower maintenance and easier operation. It will pay you, too, to find out what a modern "PAYLOADER" can do to increase production and reduce the costs of handling loose, bulk materials. Your Hough Distributor is ready to demonstrate. Also ask him about Hough Purchase and Lease Plans.

#### THE FRANK G. HOUGH CO.

970 Sunnyside Ave., Libertyville, Ill.

Send more "PAYLOADER" information on:

- ☐ Model HA (2,000 lb. carry capacity)  
☐ Larger models (up to 9,000 lb. carry capacity)

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

12-A-2



## PAYLOADER®

MANUFACTURED BY  
THE FRANK G. HOUGH CO. LIBERTYVILLE, ILL.

SUBSIDIARY—INTERNATIONAL HARVESTER COMPANY

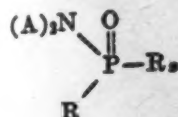




## Industry Patents and Trademarks

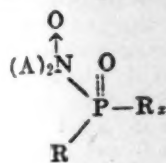
2,814,636

**Organophosphoramide N-Oxide Pesticide Product and Process for Making it.** Patent issued Nov. 26, 1957, to Mark A. Stahmann, Thomas C. Allen, and John E. Casida, Madison, and R. Keith Chapman, Verona, Wis., assignors to Wisconsin Alumni Research Foundation, Madison. A pesticide composition containing as an essential ingredient an organophosphoramide N-oxide product represented by the following formula:



Where A represents a lower alkyl group, R is selected from the group consisting of N(A)<sub>2</sub> and OA, and R<sub>x</sub> represents a member of the group consisting of fluorine, chlorine, p-nitrophenoxy, and OP(O)(R), where R is as defined above.

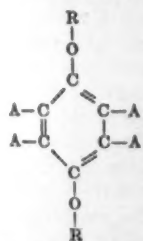
The process of increasing insecticidal activity of an organophosphoramide represented by the formula:



where A represents a lower alkyl group, R is selected from the group consisting of N(A)<sub>2</sub> and OA, and R<sub>x</sub> represents a member of the group consisting of fluorine, chlorine, p-nitrophenoxy, and OP(O)(R), where R is as defined above, which comprises chemically oxidizing the phosphoramidate to convert at least a portion thereof to a quaternary phosphoramidate N-oxide compound represented by the formula in claim 1 where A, R and R<sub>x</sub> are as defined therein, said oxidation being such as to provide oxidized products with increased cholinesterase activity and a resulting reaction mixture which yields an aldehyde when treated with acid.

2,813,101

**Stabilized Insect Repellent Composition.** Patent issued Nov. 12, 1957, to Lyle D. Goodhue, Bartlesville, and Kenneth E. Cantrel, Dewey, Okla., assignors to Phillips Petroleum Co. An insect repellent composition containing as an essential active ingredient di-n-alkyl ester of a dicarboxylic acid of pyridine wherein the alkyl groups each contain from 2 to 4 carbon atoms which comprises adding thereto a compound having the formula

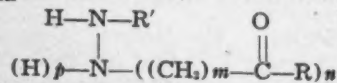


wherein each R is a member of the group consisting of hydrogen, an alkyl hydrocarbon group, an aryl hydrocarbon group, an aralkyl hydrocarbon group, and an alkaryl hydrocarbon group, each of said hydrocarbon groups containing from 1 to 8 carbon atoms, and each A is a member of the group consisting of hydrogen, a halogen selected from the group consisting of chlorine and bromine, an alkyl hydrocarbon group, an aryl hydrocarbon group, an aralkyl hydrocarbon group, and an alkaryl hydrocarbon group, each of said hydrocarbon substituent groups containing from 1 to 8 carbon atoms, and wherein not more than one of said A substituents is a halogen.

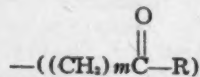
2,814,582

**Method and Hydrazine Compositions for Treating Plants.** Patent issued Nov. 26, 1957, to Johannes

Thomas Hackmann, Amsterdam, Netherlands, assignor to Shell Development Co., Emeryville, Cal. A fungicidal composition comprising a hydrazine having the structural formula



wherein R is chosen from the group consisting of hydrogen, hydroxyl and aliphatic radicals; m is an integer ranging between 0 and 4; R' is chosen from the group consisting of hydrogen and



radicals wherein R is chosen from the group consisting of hydrogen, hydroxyl and aliphatic radicals, and n is an integer ranging between 0 and

4; n is an integer ranging between 1 and 2; and p is an integer ranging between 0 and 1; and a surface-active wetting agent suitable for dispersing said composition in an aqueous medium.

### Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of \$25 must accompany each notice of opposition.

**Spee-Dee**, in script type, for pressurized or aerosol containers for insecticides, insect repellants, weed killers, plant sprays and other materials. Filed June 20, 1955, by Demert & Dougherty, Inc., Chicago. First use on or about May 29, 1952, on aerosol insecticides.

**Drawing of droplet-shaped cartoon figure**, for liquid seed treating compositions having disinfectant, fungi-

CROPLIFE, Dec. 9, 1957—7

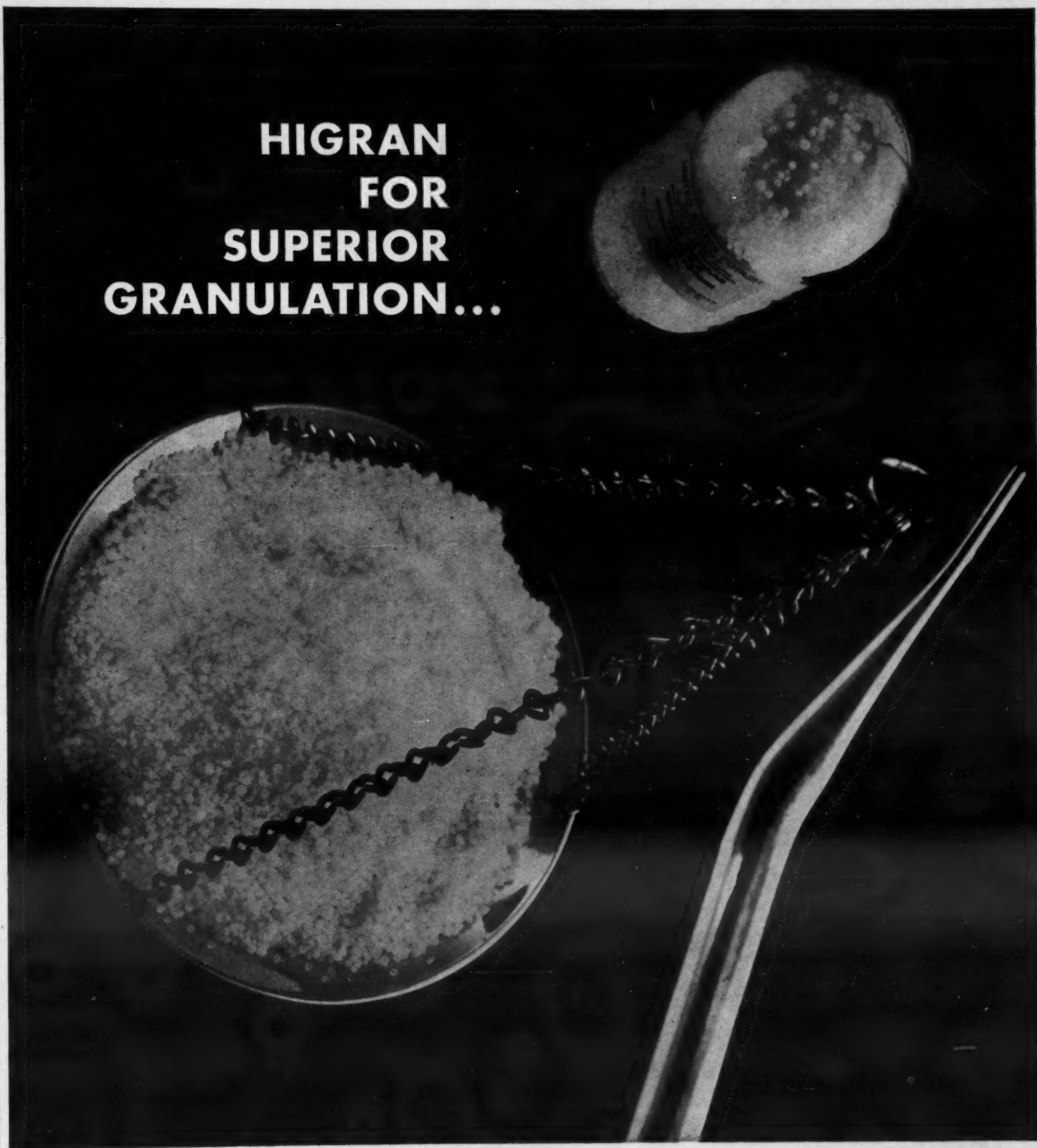
cidal, and insecticidal properties. Filed Feb. 7, 1956, by Panogen, Inc., Ringwood, Ill. First use on or about Oct. 1, 1954.

**Cubetold**, in capital letters, for insecticide and larvacide in liquid and granular form. Filed Oct. 1, 1956, by Whitmire Research Laboratories, Inc., St. Louis, Mo. First use April 30, 1956.

**Prima**, in hand-lettered script, for specially prepared fertilizer. Filed Oct. 17, 1956, by Planters Cotton Oil & Fertilizer Co., Rocky Mount, N.C. First use March 1, 1930.

**Nutra-Phos**, in capital letters, for tree deficiency spray containing zinc, manganese, and phosphate. Filed Dec. 26, 1956, by Leffingwell Chemical Co., Whittier, Cal. First use March 24, 1952.

**Miracle Rain**, for plant stimulant. Filed June 10, 1957, by Mary Diamond, doing business as Diamond Chemical Co., Newark, N.J. First use on or about April 12, 1957.



## USP'S SPECIALLY SIZED HIGRADE GRANULAR

USP's new Higran—a white granular muriate of potash specially sized for the manufacture of modern fertilizers. Non-caking and free-flowing throughout, Higran is the purest agricultural granular muriate of potash now available (62/63% K<sub>2</sub>O).

You're invited to contact USP for consultation. Our Technical Service Department welcomes your inquiries.

USP also offers Higrade muriate of potash—  
62/63% K<sub>2</sub>O—and  
Granular muriate of potash—  
60% K<sub>2</sub>O—both free-flowing and non-caking.

UNITED STATES POTASH COMPANY

DIVISION OF UNITED STATES BORAX & CHEMICAL CORPORATION

50 Rockefeller Plaza, New York 20, New York

Southern Sales Office: Rhodes-Haverty Building, Atlanta, Georgia



MEMBER:  
AMERICAN  
POTASH  
INSTITUTE

REG. U. S. PAT. OFF.



## BENSON

(Continued from page 1)

be, Mr. Benson said that he expected that USDA as well as other federal agencies will have to share in reductions necessary in the domestic budget for fiscal year 1959. He immediately followed up this comment by admitting that reductions within the USDA budget can most easily be effected through reductions in the requirements for price support programs.

Subsequently, Mr. Benson remarked that when he goes before Congress he will recommend increases in acreage allotments for basic commodities, but only if Congress would grant discretionary authority to USDA as far as price support levels are concerned.

Following his press conference, at which the above statements were made, his subordinates said that what

was implied was a request to Congress for discretionary price support for the basic commodities of wheat, cotton, corn, peanuts and rice at between 60-90% of parity. That has been his persistent position before Congress heretofore. Previously his contentions were supported with an insistent declaration that facts prove the old farm program is moribund and the present lot of the farmers caught in the cost-price squeeze has been the result of a futile attempt to maintain a status quo for agriculture. What is needed, however, is a forward look for the farm community which will prepare it for the changes that are rapidly taking place, he maintains.

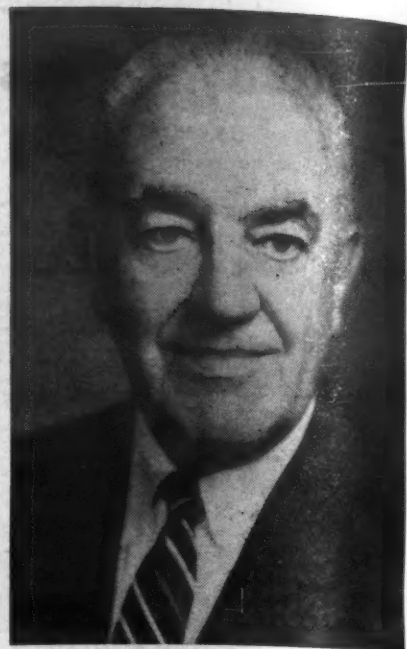
As for the feed grains, Mr. Benson said that at this time he does not have discretionary price support authority over them and also over the oilseed crops. While he did not so say, it is believed that if he can get congressional approval to wipe out the last vestiges of the Steagall Amendment which established the present base

for price support programs. It is more than likely that he would lower price supports for oats, barley, rye, grain sorghums and the oilseed crops to levels lower than those now prevailing.

As Mr. Benson expressed it, he would support those commodities at levels which would permit them to move freely in the open market.

Concerning his budget proposals, the Secretary said that his basic documents had been approved in their present concept but final approval had not yet been obtained. It was in this connection that he commented that USDA as well as other federal agencies would probably be required to contribute to sharing some part of the necessary reductions of the domestic budget for fiscal year 1959.

He commented that in the soil bank program there was some area for money saving in the USDA budget but he noted that the present legislation carried the soil bank through 1959 and if any changes in those ex-



Robert N. Conners

**TO RETIRE**—Robert N. Conners, executive vice president of the Chase Bag Co., will retire Dec. 31, but will continue to serve as a member of the firm's board of directors. Mr. Conners entered the bag business in 1922 as a salesman for the Northern Bag Co., which was merged with Chase in 1925. He served successively as sales manager of Chase's Minneapolis branch, midwestern zone manager, vice president and general sales manager, and was appointed executive vice president in 1953. He has served on the firm's board of directors since 1939, and is a past president of the Textile Bag Manufacturers Assn.

penditures were to be made it would be up to Congress to order them.

Mr. Benson told the press gathering that he had been operating under laws enacted by Congress and that in recent conversations with opposition farm leaders they found a general area of agreement wherein it was admitted that the old farm programs had been designed to the maintenance of the status quo of the past. Modern programs need to be geared to the outlook of the future, he said. He cited for example conditions of the farm community in North Carolina, home state of Harold Cooley, (D), house agriculture committee chairman, where many small five-acre farmers were totally unable to take advantage of modern farming practices although they had been held in this minor form of economic bondage through the attractions of the high price support programs.

News that Mr. Benson had been given the green light on his cabinet post at least through this session of Congress by the Eisenhower administration has previously been noted in Croplife. Up to that time a formidable drive had been underway in Republican party circles to unseat him. He remarked that he had summoned press corps reporters to the conference this week to dispel rumors regarding his status and to reveal his firm resolution to continue his fight for what he firmly believes is in the best interests of American farmers.

He admitted that many politicians would still disagree with him but he said that was merely one of the many virtues of a democracy and he reiterated his belief that the right principles—those he holds—would in the long run prevail.

## JOINS MICHIGAN CHEMICAL

**SAINT LOUIS, MICH.**—Michigan Chemical Corp. here has added Dr. Donald E. Overbeek to its research staff, according to the announcement of Dr. Dwight Williams, director of research. Dr. Overbeek was recently with Stauffer Chemical Co. at Chauncey, New York, as a research chemist.



## Be sure you have plenty on hand when your farm customers ask for New, Guaranteed\* Free-Flowing Phillips 66 Ammonium Nitrate!

This great new Ammonium Nitrate and consistent advertising support offer you exciting new sales opportunities. Millions of farmers have read about new guaranteed free-flowing Phillips 66 Ammonium Nitrate. They know that an exclusive new Phillips process produces Phillips 66 Ammonium Nitrate with prills that are round, hard, dry and uniform. There's no caking, clogging or bridging in the applicator; and it flows freely to give more even feeding of crops.

Its performance is guaranteed, and performance counts with your customers! You get the full backing of Phillips Petroleum Company in this guarantee of free-flowing performance we offer your customers—

*"New Phillips 66 Ammonium Nitrate is guaranteed to flow freely when stored and applied in a normal manner. If you are not satisfied that it lives up to this guarantee, your fertilizer dealer will replace it at no additional expense to you."*

Cash in on the advertising of new Phillips 66 Ammonium Nitrate. Order your supply now.

A companion high nitrogen fertilizer for your quality mixed goods.

## PHILLIPS PETROLEUM COMPANY

Phillips Chemical Company, a Subsidiary, Bartlesville, Oklahoma

## Offices in:

AMARILLO, TEX.—First Nat'l Bank Bldg.  
ATLANTA, GA.—1428 West Peachtree St., N.W.  
Station "C" P.O. Box 7313  
BARTLESVILLE, OKLA.—Adams Bldg.  
CHICAGO, ILL.—7 South Dearborn St.  
DENVER, COLO.—1375 Kearney St.  
DES MOINES, IOWA—6th Floor, Hubbell Bldg.

HOUSTON, TEX.—6910 Fannin St.  
INDIANAPOLIS, IND.—1112 N. Pennsylvania St.  
KANSAS CITY, MO.—500 West 39th St.  
MINNEAPOLIS, MINN.—212 Sixth St. South  
NEW YORK, N. Y.—80 Broadway  
OMAHA, NEB.—6th Floor, WOW Building  
PASADENA, CALIF.—330 Security Bldg.

RALEIGH, N. C.—401 Oberlin Road  
SALT LAKE CITY, UTAH—68 South Main  
SPOKANE, WASH.—521 East Sprague  
ST. LOUIS, MO.—4251 Lindell Blvd.  
TAMPA, FLA.—3737 Neptune St.  
TULSA, OKLA.—1708 Ulta Square  
WICHITA, KAN.—501 KFH Building



## SHOP TALK



### OVER THE COUNTER

By Emmet J. Hoffman  
CropLife Marketing Editor

Farm supply dealers who are providing special services, so necessary in these competitive times to get and keep a steady list of customers, may sometimes find a profit leak if there isn't a sufficient mark-up to cover the expense of providing the service.

In one way or another, the special services must be paid for because their costs are real and cannot be absorbed or written off. In many cases, the cost can be added in the price of the products sold.

This leads to the question: "How much can a dealer afford to give his customers in the way of services?" Or, expressed in another way: "How many services can a dealer charge for in his mark-up?"

This question must be answered individually by each dealer. How is your mark up? Is it sufficient to cover all your cost and still leave a profit? If it is not, it's time you took a critical look at your operation to see what can or should be done to improve the situation. Either you must curtail customer services or increase your mark-up to the point that you can show a profit.

In practically every instance, the customer will go along with an increased mark-up if the need for the increase is explained to him as a matter of business necessity.

It has been said, "The producer has put on a business suit," meaning that the farm customer is becoming more of a business man. It is time for the dealer to put on a similar suit and start applying good business practices in operating his business.

Some of these practices are:

1. A more progressive approach to the problem of employee bonding.

2. Adequate insurance coverage for the dealer's business, including fire and liability insurance of all kinds.

3. More realistic financing plans.

4. Complete and adequate records to keep the dealer informed of the current status of his business at all times. The records do not necessarily need to be complicated, but they should be complete enough to furnish information needed for management control. The dealer should obtain the assistance of his local accountant in setting up and working out the details of an accounting system for his business.

5. Quarterly statements showing results from operations and the financial condition of the company on statement date. Less frequent statements do not keep the dealer as closely informed as he should be. The statements will not serve their purpose if the information supplied is not used by the dealer.

6. A sound credit and collection policy which is explained to all customers asking for credit. The dealer can reduce his credit and collection expense by investigating each credit applicant before any credit is extended, by insisting that terms and limits be honored and by prompt action in

the collection of any past due accounts, thereby curtailing or possibly eliminating credit losses.

7. Arranging for long term financing of fixed asset additions rather than depleting his working capital for such additions.

8. Constant review of all expense items to see which can be curtailed or eliminated entirely without affecting the efficiency of the dealer's operation.

9. Analyze and know the business potential in your trade area. Then, make a concerted effort to build a profitable sales volume.

The dealer must provide vital services to his customers if he is to maintain sales volume and have an opportunity for profit. Consider, then, each service the customers have requested and those which they might logically be expected to ask for. Can such services be included in regular sales mark-up or can they be paid for in some other way? If not, consider the effect on your business. It may be good to know you are providing those extras—but make sure you are not also providing bankruptcy for your business.

### Nebraska Exposition Planned for Jan. 14-16

LINCOLN, NEB.—The Nebraska Fertilizer Institute, Inc., and the Nebraska College of Agriculture, extension service, will sponsor on Jan. 14-16, a joint Fertilizer-Machinery-Chemical Exposition at the new Pershing Auditorium here.

The three days will be filled with talks and discussions on uses of fertilizer, machinery and chemicals in today's production methods.

This exposition will take the place of the annual Fertilizer Dealers Conference at the College of Agriculture and in addition it will be opened to farmers and producers of the state and area. Arrangements have been made for commercial firms to display their products.



"Okay, take it away!"

### QUOTE

"This is a great era of peacetime progress. There are more than 172 million citizens to feed and clothe and the population growth continues to surge upward—both here and abroad. There will be an ever-expanding demand for the products of U.S. farms and ranches."—True D. Morse, Undersecretary of the U.S. Department of Agriculture.



**PRIZE WINNING DISPLAY**—Here is the display of the East Bay Nursery, Berkeley, Cal., viewed from the street and from the inside of the store, which won a free trip to Paris for Mr. and Mrs. Gordon Courtright, owners of the firm. The couple were named winners in a national "\$10,000 Chlordane Show and Sell" contest sponsored by the Velsicol Chemical Corp., Chicago. More than 2,000 entrants competed for prizes.

### Velsicol Chemical Announces Winners Of Display Contest

CHICAGO—The East Bay Nursery, operated by Mr. and Mrs. Gordon Courtright at Berkeley, Cal., was picked as having the outstanding display in the "\$10,000 Chlordane Show and Sell" contest sponsored by the Velsicol Chemical Corp., Chicago.

More than 2,000 entries were in the contest and several hundred qualified for final judging, company officials said. The East Bay Nursery had a sales increase of 60% over the same period in 1956, the Courtright's said. Mr. and Mrs. Courtright won a free trip to Paris and \$500 for winning one of the six regional prizes.

The second national prize, with a total award of \$1,250, went to Tree-

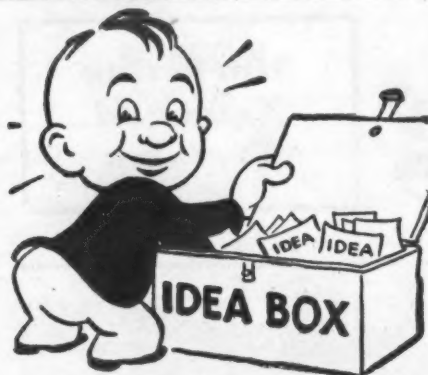
land Garden Center, Lindenhurst, L.I., N.Y., and third place was awarded to Luke P. Argilla of Argilla & Boscacci, Redwood City, Cal.

Any lawn and garden supply retailer could enter by displaying at least five cases of Chlordane, filling out an entry blank, and furnishing a picture of his display. Displays had to be maintained for at least two consecutive weeks between May 1 and June 30. The country was divided into six regions, based on number of store units and area sales volume. Five prizes were awarded in each region, in the amounts of \$500, \$250, \$125, \$75, \$50. Regional winners were eligible for the grand national prize.

Additional prizes and bonuses were awarded to distributor and formulator salesmen who helped contest entrants set up displays.

The contest was announced through trade ads and a large mailing brochure.





## What's New...

In Products, Services, Literature

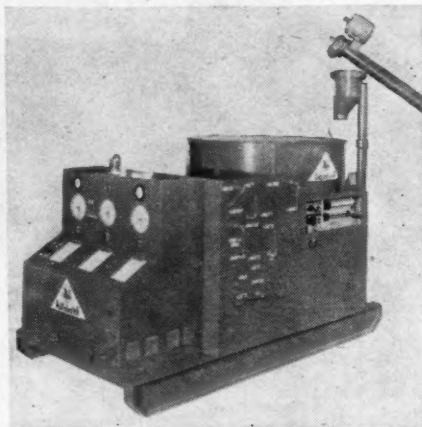
You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

### No. 6660—55-Gal. Steel Drums

Vulcan Containers, Inc., is offering a line of open head and closed head, 55-gal. steel drums, manufactured to comply with Universal Standard dimensions, to meet Interstate Commerce Commission and Uniform Freight Classification specifications, company officials have announced. A variety of types and sizes of openings, fittings and plugs are available in the different style drums. The open head style will be furnished with the lever or bolt locking covers. In addition to standard colors and for product and company identification, the drums can be decorated, striped or painted any solid color. Details will be supplied without charge. Check No. 6660 on the coupon and mail it to Croplife. Please print name and address.

### No. 6663—Liquid Fertilizer Plant

A skid-mounted, batch-type, complete analysis liquid mixed fertilizer plant featuring automatic operation has been introduced by the Barnard & Leas Mfg. Co., Inc. Called by the trade name, the "Complete Autobatch Skid Plant" the unit has a "B & L Autobatch" control unit for producing neutral solutions, a scale-mounted "B & L Liquefizer" for adding solids,



automatic solids handling system with cycle control, central routing panel, completely wired and pre-piped internally, all mounted on a heavy duty welded I-beam skid frame. It is designed as a complete package for ready installation by connecting to raw material supply, and electrical connection. A minimum of auxiliary equipment is required for the over-all operation, company officials state. A wide range of complete analysis liquid mixed fertilizers containing nitrogen, phosphorus and potash can be produced, it is claimed. Herbicides, insecticides and trace elements can be added to the formulation. Complete information on batch-type processing of neutral solution complete analysis

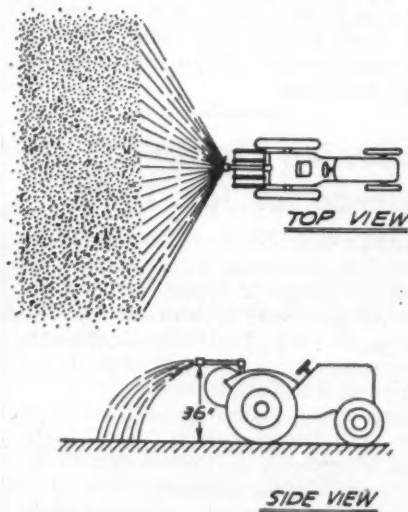
liquid mixed fertilizers is available. Check No. 6663 on the coupon and mail it to Croplife.

### No. 6661—Flaked Stearyl Alcohol

The Hodag Chemical Corp. has announced the production of a flaked, technical grade stearyl alcohol in bag form in the quantity requested by the user. Stearyl alcohol, according to the company, has possible application as an intermediate for insecticides and for several other uses. An information sheet listing specifications, physical and chemical properties, and other data, is available. Check No. 6661 on the coupon and mail it to Croplife.

### No. 6659—Spray Nozzle Tip

The Spraying Systems Co. announces a new spray nozzle tip for use with its GunJet No. 2 or No. 42 spray guns that will project a spray in a flat spray pattern up to 42 feet wide. In use the spray gun is mounted on the rear of the tractor about 3 ft. above ground level and pointing to the rear. In this position, the spray gun will broadcast-spray grains and grasses and do related types of oper-



ations. The spray nozzle tip is identified as the DDOC tip, and is made with four orifices to provide equalized distribution of the spray throughout the pattern area, it is claimed. For details check No. 6659 on the coupon and mail it to Croplife. Please print or type the necessary information.

### No. 5858—Belting

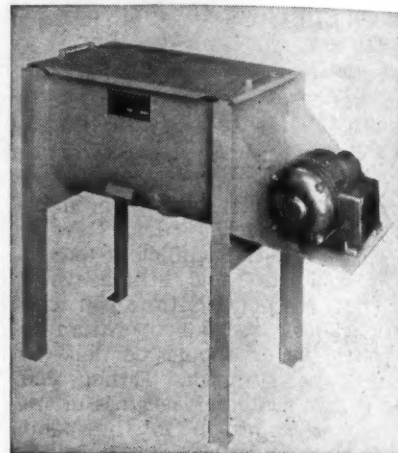
"Hycar" is the trade name of a synthetic rubber that has been adapted to conveyor belting by the Globe Woven Belting Co., Inc. Superior resistance to animal fats and vegetable oils is claimed. Company officials state that the belting stays pliable at -30° to -40° F. and maintains its stability at 250° F. Widths up to 48 in. and 3-, 4- and 5-ply weights are available. Several colors are provided. Check No. 5858 on the coupon and mail it to secure additional information.

## Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

### No. 5825—Laboratory Mixer

The Rapids Machinery Co. has introduced its new Marion laboratory mixer, designed for use in the laboratory or as a production machine. The mixer is a "compact unit that features the same cross-blending mixing action found in the larger standard and industrial units," company officials said. Inside dimensions measure



24 in. long, 12 in. wide and 16 in. deep, with an over-all length of 36 in., a width of 19 in., and a height, with legs, of 34 in. It has a capacity of 2 cu. ft. or approximately 50 lb. and it is available in either mild steel or stainless steel and comes equipped with a ¾ h.p. motor, iron legs, and a sponge rubber-gasketed cover. Secure complete details by checking No. 5825 on the coupon and mailing it.

### No. 6656—Lubricant Booklet

A new booklet published by Monsanto Chemical Company's Organic Chemicals Division claims that "major savings in air compressor maintenance costs and greater safety from flash fires and explosions can be obtained with Pydraul AC, a fire resistant synthetic lubricant for air compressors." The auto-ignition temperature of the fluid is said to be greater than 1,100° F. Carbon deposits on exhaust valves and in interstage equipment are reduced with the lubricant, is claimed. Secure the booklet by checking No. 6656 on the coupon and mailing it to Croplife. Please print name and address.

### No. 5839—Belt Conveyor Idlers

New literature on belt conveyor idlers manufactured by the C. O. Bartlett & Snow Co. is available without obligation. An 8-page bulletin describes the line of idlers including troughing, flat, self-aligning, rubber disc and return designs; 4-, 5- and 6-in. diameter rolls fitted with either Timken or "sealed for life" bearings; construction; and lists standard sizes, dimensions and weights. Check No. 5839 on the coupon and mail it to secure details.

### No. 5833—Electric Vibrator

The Cleveland Vibrator Co. has announced a redesign of its RC-50 electric vibrator, used on bins, chutes and hoppers for handling all types of dry or viscous bulk materials. The purpose of the design change, the company stated, is to provide a more powerful unit that is easier to handle and install. The new unit develops a maximum vibrating impact of 2,250 lb. This compares with 1,440

(Continued on page 13)

### Send me information on the items marked:

- |  |   |
|--|---|
| <input type="checkbox"/> No. 5825—Laboratory Mixer   | <input type="checkbox"/> No. 5859—Hoist Carrier     |
| <input type="checkbox"/> No. 5826—Rat, Mouse Control | <input type="checkbox"/> No. 6655—Tomato Hormone    |
| <input type="checkbox"/> No. 5828—Insecticide        | <input type="checkbox"/> No. 6656—Lubricant Booklet |
| <input type="checkbox"/> No. 5829—Bulk Container     | <input type="checkbox"/> No. 6657—Can Printing      |
| <input type="checkbox"/> No. 5833—Electric Vibrator  | <input type="checkbox"/> No. 6658—Solutions         |
| <input type="checkbox"/> No. 5839—Idlers             | <input type="checkbox"/> No. 6659—Nozzle Tip        |
| <input type="checkbox"/> No. 5843—Bulk Materials     | <input type="checkbox"/> No. 6660—Steel Drums       |
| <input type="checkbox"/> No. 5858—Belting            | <input type="checkbox"/> No. 6661—Stearyl Alcohol   |
|  | <input type="checkbox"/> No. 6663—Liquid Fertilizer |

(PLEASE PRINT OR TYPE)

NAME .....

COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS  
PERMIT No. 2  
(Sec. 34.9,  
P. L. & R.)  
MINNEAPOLIS,  
MINN.

BUSINESS REPLY ENVELOPE

No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Croplife

P. O. Box 67

Reader Service Dept.

Minneapolis 1, Minn.



To help you sell more Spencer "Mr. N" Ammonium Nitrate and more mixed fertilizer than ever before

# Spencer Announces Its Biggest Ad Campaign Ever For 1958



LOOK HOW SPENCER  
IS GOING TO  
HELP YOU SELL!!



## A Giant Series of Magazine Ads During Your Biggest Selling Season

To help build sales for you, Spencer is running advertisements that tell success stories of farmers in your area! Every one of these ads sells farmers on the idea that a *complete* fertilization program, which includes both mixed fertilizer and Spencer "Mr. N", pays off in extra yields and extra profits per acre!

During the peak of your selling season, 9 out of 10 families in your area will be reached by these advertisements. From January through May, Spencer will be running ads in all nine of these leading farm publications:

Capper's Farmer  
Successful Farming  
Nebraska Farmer  
Wallaces' Farmer  
Prairie Farmer  
Colorado Rancher and Farmer  
The Farmer  
Wisconsin Agriculturist  
Weekly Star Farmer

But that's not all! To make this advertising campaign even stronger, Spencer is also going to sponsor programs on the most popular farm radio stations throughout the Midwest! So get ready for sales—stock up on Spencer "Mr. N"!

## Why Farmers and Dealers Prefer Spencer "Mr. N" Ammonium Nitrate:

**Time after time**, surveys show that more farmers prefer Spencer "Mr. N" than any other nationally-advertised brand. So when you stock "Mr. N", you know you have the brand your customers *want . . . and buy!*

**Will not cake!** Since "Mr. N" is made in round pills and packed in polyethylene-lined bags for 100% dryness, it *stays* free-flowing. That's mighty important to you *and* your customers: No expensive, special storage facilities are needed!

**Now, to help you sell more "Mr. N"** to more people in your area, Spencer is backing you up with a stronger advertising campaign than ever before. So see your fertilizer manufacturer right away. Stock up on Spencer "Mr. N" Ammonium Nitrate!



## A Giant Series of Farm Radio Programs During Your Biggest Selling Season

Radio Farm Directors will be recommending that their listeners use both mixed fertilizer and Spencer "Mr. N" Ammonium Nitrate! During your strongest selling months, this line-up of top stations and leading radio farm directors will be working to boost sales for you:

Jim Leathers on	KMBC-KFRM	Kansas City, Mo.
Ted Mangner on	KMOX	St. Louis, Mo.
Wilbur Levering on	WIBW	Topeka, Kans.
Lester Weatherwax on	KFBI	Wichita, Kans.
Bill Macdonald on	KFAB	Omaha, Nebr.
Chuck Worcester on	WMT	Cedar Rapids, Iowa
Maynard Speece on	WCCO	Minneapolis, Minn.
Bruce Davies on	WLS	Chicago, Ill.
Jay Gould on	WOWO	Ft. Wayne, Ind.
Harry Andrews on	WIBC	Indianapolis, Ind.
WHO		Des Moines, Iowa

Day after day, these farm radio shows will reach thousands of farmers—hundreds of them right in your area! So get ready for sales—stock up on Spencer "Mr. N"!

# SPENCER CHEMICAL COMPANY

Dwight Building • Kansas City 5, Mo.







lb. with the old design. The unit is 15 lb. lighter, weighing in at 84 lb. The over-all length has been reduced from 14½ in. to 13½ in. The mounting base is changed for easier installation and to provide a better support for the vibrator. Heavier duty wiring is now used. The RC-50 idles at 200 watts on 220 volts. Models 110, 440 and 550 volt are also available. Secure details by checking No. 5833 on the coupon and mailing it to this publication.

### No. 6655—Tomato Hormone Spray

A new tomato hormone spray, called by the trade name, "Tomato Set," is available from the Miller Chemical & Fertilizer Corp. The company announcement states that the spray was developed by Dr. E. M.

Emmert at the University of Kentucky experiment station, that a patent has been applied for by the Kentucky Research Foundation, and that the Miller company has been licensed by the foundation to manufacture and distribute the new spray. Application of the product can be made broadcast over the entire plant and the set and fruit size can be increased, company officials state. The product is a combination of boron and a synthetic hormone and can be mixed with insecticides and fungicides, if desired. Details may be secured by checking No. 6655 on the coupon and mailing it to Croplife.

### No. 6658—Non-Pressure Solutions

The Broyhill Co. has available literature about its equipment for non-pressure nitrogen solutions and balanced mix solutions. Company officials said that the applicators described are designed for "easy and trouble free applying of liquid fertilizers." The units are for sale or rent to customers. The literature, including prices, is available without charge. Check No. 6658 on the coupon and mail it to Croplife. Please print or type.

### No. 6657—Can Printing

A portable printing device for printing on 5-gal. cans has been developed by the Metal Products Division of the Chapman Chemical Co. The machine is called by the trade name, "Print-A-Can Printer," and is said to handle up to 500 cans per hour with one inexperienced operator. The unit weighs 160 lb., is equipped with casters, can print markings stable enough to exceed requirements for government contracts, and is low-cost, company officials state. Secure details by checking No. 6657 on the coupon and mail it to Croplife.

### No. 5843—Bulk Materials Movement

A new 32-page product bulletin, "Airstream Conveyors — the Automatic Answer to Bulk Handling," has been published by the Dracco Corp. Bulletin No. 530 presents detailed technical information on how pneumatic conveying of bulk materials can be utilized. System diagrams of typical installations point out the applications of the conveyors. More than 70 illustrations are included. Materials—both granular and powdered—which can be handled are listed. A copy is available without charge. Check No. 5843 on the coupon and mail it to this publication.

### No. 5829—Corrugated Bulk Container

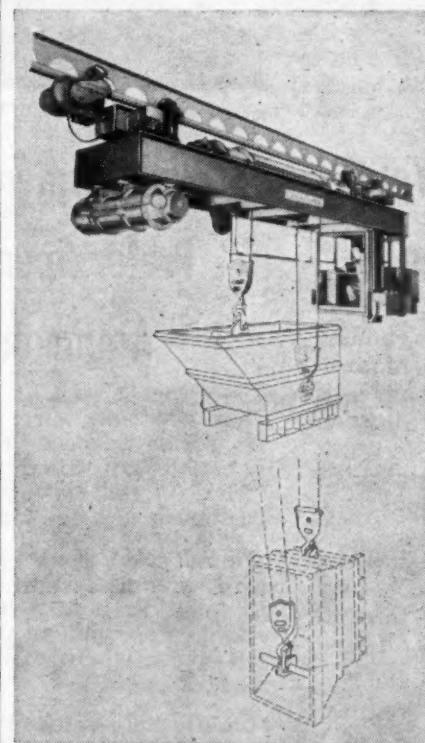
A corrugated bulk container which holds from 1,000 to 1,500 lb. of a product is being manufactured by the Gaylord Container Corporation



Division of Crown Zellerbach Corp. The container is said to provide a clean storage box with a cover for protection from contamination and makes it possible to obtain maximum storage capacity safely and efficiently in a warehouse. The corrugated containers can be knocked down flat for easier storage until they are to be used again. The containers can also be used for shipping merchandise. Check No. 5829 on the coupon and mail it to secure details.

### No. 5859—Hoist Carrier

A cab-controlled twin-hook hoist carrier provided with an auxiliary hoist for dumping has been built by the Cleveland Tramrail Division, the Cleveland Crane & Engineering Co. Of weatherproof construction for outdoor service, the unit will pick up tote boxes of materials, haul them and empty by tipping. Various bulk



materials may be handled. Hoisting and travel motions are controlled by the cab operator. The main hoist alone raises or lowers a tote box in upright position. Hoist speed is 35 f.p.m. Travel speed is 250 f.p.m. Variable speed drum controllers are provided. The capacity is 12,000 lb., i.e., 6,000 lb. per hook. Other carriers of different capacities can be furnished. Secure details by checking No. 5859 on the coupon and mailing it to this publication.

### No. 5828—Insecticide

A new insecticide, "6% Chlordane Dust," in a refillable squeeze duster and two new sizes for the "Hess Bomb" aerosol have been placed on the market by Hess & Clark, Inc. The chlordane dust product is designed for use on household, lawn and garden insects. The container holds 8 oz. and a 2½ lb. refill is also available. Bomb aerosol sizes are 7

oz. and 15 oz. This product contains strobane, a hydrocarbon. Dealers may secure details by checking No. 5828 on the coupon and mailing it to this publication.

### No. 5826—Rat, Mouse Control

"Purple Death" is the trade name of a rat and mouse control which has been placed on the market by the O. E. Linck Co., Inc. Company officials say that the product is high in proteins, minerals and vitamins, to make it attractive to rodents. The toxicant used is said to be tasteless and odorless. A single good feeding is said to assure certain kill. The prod-



uct is packed in polyethylene lined feeding stations, each station being capable of killing 6-8 rats or 10-15 mice. Dealer mark-up on the product is about 48%. Secure complete details by checking No. 5826 on the coupon and mailing it to this publication.

### Larned, Kansas, Firm Reorganizes, Plans Fertilizer Lines

LARNED, KANSAS—The reorganization of the former Larned Implement Co. at 114 E. 5th St., Larned, Kansas, as a complete liquid fertilizer business, offering a soil analysis laboratory service, has been announced by C. M. Phinney, Jr., manager.

The firm, to be known as Phinneys, will have as partners C. M. Phinney, Jr., and his father, C. M. Phinney.

The company will eliminate the farm implement and parts lines which it formerly carried. It is intended that the irrigation equipment and home water system lines formerly carried will continue to be promoted. The firm will also handle a dry fertilizer line and later it plans to expand further in the farm supply business.

C. M. Phinney, Jr., was formerly technical service representative for the Sohio Chemical Co.

### Larry Rowse Heads Oregon Weed Conference

PORTLAND, ORE.—Larry Rowse of Portland was named president of the Oregon Weed Conference at its annual meeting held at Oregon State College, Corvallis. Ray Hubbel of Medford was named vice president and Rex Warren of Corvallis, secretary-treasurer. New directors are Gordon Walker of Independence and Raymond Crabtree, Maupin.

George Moose, state department of agriculture, said Oregon's ragweed control will be put into full operation next year. He said shortage of personnel was a handicap last summer, the first year, but 2,000 acres were sprayed in Josephine County, 950 in Marion, 990 in Clackamas, 100 in Lane and 100 in Benton counties.

**SPRAY NOZZLE**  
REFERENCE DATA  
*Yours for the asking!*

**TEEJET SPRAY NOZZLES** with interchangeable orifice tips... write for Catalog 30.

**TEEVALVE selector valve for booms...** Bulletin 84.

**GUNJET SPRAY GUNS** for pressures to 800 p.s.i.—Bulletins 65, 69 and 80.

**BOOMJET SPRAY NOZZLES** for broadcast spraying... Bulletins 66 and 71.

**PRESSURE RELIEF VALVES** Bulletin 83.

**SUCTION STRAINERS AND ACCESSORY EQUIPMENT** Write for Bulletin 85 and Catalog 30.

**SPRAYING SYSTEMS CO.**  
3214 RANDOLPH ST. • BELLWOOD, ILLINOIS

USE  
**Field Master**  
**SPRAY EQUIPMENT**  
for  
**LOW COST APPLICATION** of fertilizer—insecticides—weedicides.

Your biggest low-price sprayer value. High in quality—above the average in performance. Field Master Sprayers available as complete units or as separate kits: Trailer, Boom Assembly, Boomless Kit, Pump Box, Tank, etc. Write for Free Colorful Field Master brochure.

**The Broyhill Company — Dakota City, Nebraska**



the state lab reports that out of 200,000 soil samples analyzed last year close to 60% needed lime."

Oscar grunted impatiently. "Why don't you leave all that education stuff to the colleges? Ach, our job is to sell fertilizer and farm supplies, not to preach, preach, preach to farmers."

"No, you are wrong, Oscar," said Pat patiently. "There is a lot about lime and fertilizer that farmers don't know, even though they read a lot. Quite often a fertilizer dealer has to preach to farmers, to put better methods before them. That also helps sell more fertilizer."

"Maybe to people who can't or won't pay their bills," Oscar commented practically.

"That hasn't too much to do with it," Pat insisted. "If you throw out a new idea to all farmers, a certain number will get it and use it profitably. Of those who use it some will

(Continued on page 16)



Doing Business With

Oscar & Pat



One mid-afternoon, Gil White's truck stopped in front of the Schoenfeld & McGillicuddy farm supplies store. Gil, a pudgy, overalled carpenter, who did mostly odd jobs around town, got out of the truck, came around to the back and dragged out two flat wooden boxes, with a two inch strip around the edges.

He carried these into the salesroom, which was separated from the office by a railing, then he put the pieces down and said to the puzzled, rotund Oscar, "Okay, Oscar, me boy, get out the old checkbook and give me one for \$13.80."

"\$13.80!" Oscar echoed coldly. "What for?"

"For these two boxes that Pat, your partner, ordered. Come on, don't stall. I got to live, too."

"\$13.80—for those?" Oscar asked contemptuously. "Just a couple of pieces of lumber? If you fellows get prices like that I should sell out here, ach, and go into carpentering."

Pudgy Gil White bristled, and his face got redder. "Say, I'm not overcharging you. That's a fair price. Lumber is high nowadays. And look how nice these boxes are finished. Real slick. Why for the time I put on them, I'm hardly making \$2.50 an hour, figuring I had to get the lumber, measure it up and pay for it, too."

"Huh," commented Oscar. "We could have had our men do that same job in spare time, with old scraps of lumber and saved plenty money. Trouble is somebody around here likes to spend too much money all the time."

"Yeah, and if your men would have made it out of old lumber, it sure would look homemade, too. It wouldn't sell any fertilizer."

"Sell fertilizer!" snapped Oscar. "Is that what Pat wants those boxes for?"

"That's what he said," growled Gil White. "But you agree that out with him. I was just hired to make the boxes. Now gimme my money and I'll get out of here."

"Two per cent discount?" Oscar asked coldly.

"Discount—hell!" roared White. "The prices I quote don't stand a discount. What are you trying to pull?"

"We take discounts on all our bills," Oscar said sharply. "Ach, especially on bills which we pay before they are due."

"Oh, all right, take the darn two per cent," grunted Gil White irritably. "I'm glad I don't have to argue like this every place I do business. I couldn't stand it."

"Discounts are important," Oscar said firmly, writing a check. "Every business can save lots of money taking them. You should learn that."

"Yeah, I learned something right here today," Gil White muttered. "I never want to get like that."

"What did you say," asked Oscar sharply.

"I said it's a nice day," Gil White said holding forth his hand to get the check.

"Oh, Pat has to sign it, too," Oscar said coolly. "We can mail it to you—if he comes in today. Do you want to wait?"

"Wait for a \$13.80 check?" asked Gil angrily. "No thanks. I'll go home and start work on another job. I've lost a half hour here already."

Oscar smiled and laid the check on Pat's desk. Gil White turned quickly and stomped out of the room. Tillie Mason, the plumpish bookkeeper, reached for an ulcer powder as she always did when arguments de-

veloped in the office. And they developed quite often.

When Pat McGillicuddy came in after a field trip later that afternoon, he saw the boxes and the check. "Oh, I see Gil White was here, eh?"

"Yes, and he wanted \$13.80 for those, those two boxes!" Oscar said sarcastically. "You are spending money again."

"Oh, but we will make money on that expenditure," Pat said enthusiastically. "Wait till I tell you about it."

"We make so much money we don't have time to collect what we've got

out," Oscar said bitingly. "How about that?"

"Oh, I'll make some of those delinquent account calls next week," Pat said. "Now as to these boxes. One will contain about an inch of lime, and the other will contain an inch thick spread of fertilizer. I'll place these on top of one cleared island."

Oscar looked puzzled and hostile. "Why go to all that work?"

Pat sighed. "Because many farmers need more lime on their soils, and so do many gardeners. I'll have signs which will advertise this fact. The addition of lime helps crops utilize all the fertilizer. Why in Wisconsin,

WANTED!

DEALERS AND DISTRIBUTORS FOR

(all sales through distributors)

NEW Diphacin  
JUST SAY "DIE-FAS-IN"

A Revolutionary New Rat and Mouse Bait

PROVED TO BE THE  
FASTEST MOVING MONEY MAKER

TEST MARKETING  
IN ILLINOIS

Sales of Diphacin rat and mouse bait in the Illinois test market have been spectacular! In only nine weeks' time, 80 per cent of all distribution channels have re-ordered—several, four and five times!

ALL THESE EXCLUSIVE  
ADVANTAGES



VACUUM PACKED FRESH

Won't go stale or rancid. Retains potency and acceptability to rodents indefinitely. Means no customer complaints.



HIGHEST KILL

Contains diphacinone—a new toxic chemical—the most active anti-coagulant ever used in rat bait.



CAN BECOMES SELF-FEEDER

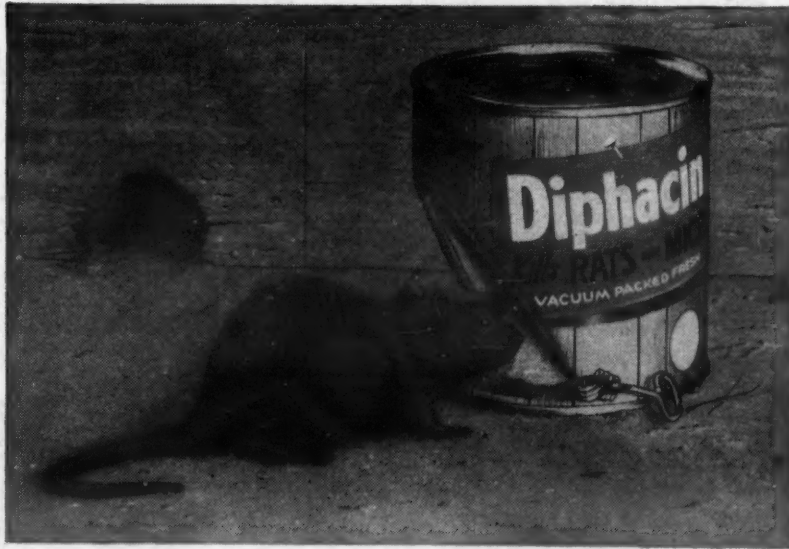
Easiest to use—no messy handling required. Each opened can becomes a perfect self-feeding bait station (see illustration).



—yet with all these advantages  
Diphacin is

PRICED TO SELL

with big profits for you



BACKED BY THE  
HARDEST HITTING ADVERTISING  
EVER DEVELOPED

Your mid-west area will be saturated with advertising for Diphacin rat and mouse bait in daily newspapers, weekly newspapers, state farm papers and on radio.

ADVERTISING TO BREAK SOON

WRITE, WIRE OR PHONE WYOMING, ILL.: 2571  
or use this handy coupon

Retail Department  
Niagara Chemical Division  
Wyoming, Ill.

Please send me your Diphacin rodenticide catalog sheet, price list with full details of your merchandising plan.

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

STREET \_\_\_\_\_

CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

I am a dealer ☐ I am a distributor ☐ (check one)







## FARM SERVICE DATA

### Extension Station Reports

Carefully balanced soil fertility may help cut down pest and disease losses.

Dr. William A. Albrecht, chairman of the University of Missouri's soils department reports that corn grown on soils with adequate and balanced fertility was better able to withstand grain borer damage in storage than corn grown on poorer soils.

In another study corn fertilized with both phosphorus and nitrogen was much less susceptible to borer damage while in storage than corn getting nitrogen only, he said.

Research with fungus diseases of soybeans clearly demonstrated that attacks of the pests were highest on soils with low calcium levels, Dr. Albrecht reports. These attacks were not evident where there were higher levels of exchangeable calcium in the soil.

"More recently," he says, "improved research methods indicate that the presence or absence of leaf-eating insects varied with the levels of nitrogen and exchangeable calcium. These two fertility elements are usually associated with production of protein-producing legume crops."

Dr. Albrecht says there is evidence that nature was able to grow crops without destruction from diseases and pests. But more research is needed to learn about soil management that nourishes the plants so well that they can protect themselves from pests and diseases.

"The challenge," he states, "lies in the possibilities of formulating a balanced fertility as a guarantee of less plant diseases and fewer pests, as well as providing the means of producing more vegetative bulk per acre."

★

Dr. Floyd W. Smith, Kansas State College agronomist, reports that fertilizing wheat can return \$2.50 for each \$1 invested in plant food.

He bases his statement on eight-year Kansas tests using nitrogen, plus necessary phosphate and potash.

He says the results include averages from all tests, whether yields were high or low.

Dr. Smith says that during a particularly favorable weather period between 1948 and 1952, wheat yield increases ranged from 20 to 30 bu. per acre on some Kansas farms where liberal applications of fertilizer were used.

Yields were doubled in some cases by the proper use of nitrogen, phosphate and potash fertilizers, he reports.

Even in drouth years, says Dr. Smith, the use of fertilizer has continued to be profitable for wheat.

He reports that the use of 50 lb. of nitrogen per acre, plus the needed phosphate and potash has given the most favorable yield results in the Kansas tests.

★

Alfalfa fields can be fertilized either in fall or spring, says a Minnesota scientist. Recent experiments by J. M. MacGregor, University of Minnesota soils scientist, show that applying fertilizer at either time will bring about the same results.

At the Rosemount Experiment Station, Dr. MacGregor compared spring and fall annual applications of 200 lb. of 0-20-20 fertilizer on Ranger alfalfa, over a 6-year period.

In 1951, first crop year after the experiment started, fall-fertilized alfalfa yielded 3.6 tons per acre, compared with 3.25 tons from spring application—not an important difference.

Yields in 1956 were 4.48 tons per acre for spring fertilizing, compared with 4.38 tons for fall fertilizing.

During the last three years, Dr. MacGregor says, there was a slight trend toward increased alfalfa yields where fertilizer was spring applied, but the difference for the entire 6 years was very small—25.3 tons from spring fertilizing and 24.9 tons for fall fertilizing.

## What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Six potash producers who in June withdrew from active participation in the activities of the National Plant Food Institute, rejoined the NPFI following a readjustment of the dues structure by the Institute. The moves were made on an individual company basis.

That pesticides are an important part of any successful farm operation, was emphasized at the Ohio Pesticide Institute's meeting in November. Subjects ranged from discussions on residues to the role of gibberellic acid in agriculture.

Speakers at the Eastern Branch of the Entomological Society of America differed in their expressed views of efforts to eradicate the gypsy moth versus merely holding the pest under control. Not only the technical aspects of the problem were discussed, but the public relations side effects as well.

The U.S. Department of Agriculture established special pioneering research groups to explore unknown areas of science. Studies will be made on plant and animal nutrition, insect pathology and physiology, and basic research in other areas.

Pacific Cooperatives announced plans to build a new \$50,000 fertilizer plant near Blackfoot, Idaho. Facilities for producing aqua-ammonia will be constructed first and expansion in other directions later.

Nearly 325 delegates turned out for the National Liquid Fertilizer Assn. convention in Cincinnati. Richard Cecil, Bartlett & O'Bryan Fertilizer Co., Owensboro, Ky., was named president. Ideas for expanding sales were discussed and equipment displays were set up during the convention.

The cost of fertilizer to farmers rose only about 1% in the year ended last Sept. 15, according to the U.S. Department of Agriculture. The fertilizer increase was the lowest in the USDA list of farmer production items except for seed and feed.

Insect resistance is real but is not always the cause of poor control measures with insecticides, it was pointed out at the Florida State Horticultural Society meeting.

The fertilizer industry Round Table held in Washington, was the occasion for presentation of numerous papers on manufacturing technology and new methods. Under the direction of Dr. Vincent Sauchelli, National Plant Food Institute, the 6th annual event attracted some 275 persons from the fertilizer industry.

The cotton yield for 1957, tallied at 413 lb. an acre, was 4 lb. an acre under the record of 1955, but still greatly beyond the ten-year average. Bales produced this year were estimated at 11,788,000 as compared to 13,310,000 bales produced in 1956.

Dr. Frank J. Welch was appointed to the board of the Tennessee Valley Authority on an interim basis, to replace the late Raymond R. Paty who died earlier this year. Other members of the board, now at full strength, are Herbert D. Vogel, chairman, and Arnold R. Jones. Mr. Jones is also on the board on an interim basis. The appointments of both himself and Dr. Welch will have to be confirmed by the Senate when it convenes early in 1958.

The California Fertilizer Assn. met at San Francisco in its 34th annual meeting. William G. Hewitt, Berkeley, was elected president to succeed Jack Baker, Los Angeles. Dr. R. L. Luckhardt, Collier Carbon and Chemical Corp., Los Angeles, was named "Industry Man of the Year."

Virginia-Carolina Chemical Corp. named James E. Nall vice president and general manager of its fertilizer division. Mr. Nall was formerly with Standard Fruit and Steamship Co.

The Middle West Soil Improvement Committee voted to join the National Plant Food Institute in the latter's broad program of developing the fertilizer market potential throughout the U.S. In a subsequent move, the NPFI accepted the Middle West group and the effective date for the merge was set for Jan. 1, 1958. Zenas H. Beers, executive secretary of MWSIC will become midwestern regional director of NPFI on that date.

Pesticide manufacturers were given until Dec. 31 to submit their views on a proposed amendment to regulations for labeling various pesticides. Under the provisions of the proposed law, no label would be accepted that directly or indirectly implies recommendations or endorsement of products or their ingredients by any federal agency.

A seven point program designed to boost fertilizer use in the South by some 7.8 million tons over a period of ten years, was presented by Dr. Russell Coleman, executive vice president of the National Plant Food Institute, at the Southeastern Fertilizer Conference held in Atlanta. He said the tonnage target for the program is based on a "realistic potential."

Results of agronomic research work were reviewed by speakers at the second annual Southern Soil Fertility Conference held at Atlanta Nov. 1. The conference was sponsored by the Southern Soil Research Committee of the National Plant Food Institute.

The National Plant Food Institute held a conference on chemical control problems at Washington, D.C. In charge of Dr. Vincent Sauchelli, NPFI scientist, the meeting heard discussions of modern methods of quality control in the manufacture of fertilizers.

A two-day session which included talks on many angles of safety in the fertilizer manufacturing field was held by the fertilizer section of the National Safety Council at Chicago Oct. 21-22. George F. Dietz, safety director, Fertilizer Manufacturing Cooperative, Inc., Baltimore, was elected chairman of the section.

A limited quantity of the new chemical compound, designated ET-57, will be supplied by the Dow Chemical Co., to certain cattle areas of four states to aid in controlling cattle grubs. The product is a systemic insecticide which is given to cattle internally. Some observers say it may save cattle growers millions of dollars annually in better meat and hides.

**A typical experience  
in the work-a-day  
lives of thousands  
of industries.**

**DOGGONE IT, PETE,  
THIS HAS GOT TO STOP!**

**Just came from heat-treat...  
Not a man wearing a respirator.**

**I'm not surprised, Jim.  
The men would rather  
breathe dust than wear  
heavy old respirators.**

**Here's what you want, men—  
The Flex-A-Foam Dust Mask—  
light as a feather!**

**It's sure light and  
comfortable, but can it  
do a man-size job?**

**It should. It filters  
non-toxic dust par-  
ticles 100 times  
smaller than you  
can actually see.**

**I know it. But I'm  
supposed to enforce  
safety rules. Oh, for  
a light, comfortable  
dust mask!**

**Seen Purchasing yet?  
They're up on  
new developments.**

**Order a trial dozen,  
Bob. Maybe they'll  
wear these without  
continual prodding.**

**They're glad to wear  
Flex-A-Foam Dust Masks.  
Our troubles are over!**

**You're right! We should  
now equip the entire plant!**

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# Developing a Sales Department And Training Salesmen

By Garland E. Benton  
Southern States Cooperative

**EDITOR'S NOTE:** Developing and upgrading a sales department, handling of manpower, sales training, the meaning of salesmanship and 21 modern tools for sales training were discussed by Mr. Benton of the marketing procurement department of Southern States Cooperative, Richmond, Va., at a recent conference for retailers of farm supplies. The text of Mr. Benton's talk follows:

Present competition for the farmer's dollar is causing all of us to re-evaluate our sales departments and analyze our position in this atomic era. We know that the challenge of the future means we must critically look at our organizations to see if we measure up to the demands of our customers.

We must develop sales departments that are conscious of the fact that they have a responsibility of being able to see the customer's viewpoint and problems in terms of his needs and wants and to be able to instruct them wisely on all phases of agricultural production in order to make the business of farming pay better.

Some of us have been blessed with farsighted management that has established hard hitting, aggressive sales departments.

The first purpose of a sales department is to sell. Research must be done to make sales departments effective. Research has been defined as "the process of finding out what people like and doing more of it, and finding out what people don't like and doing less of it."

## Effective Sales Department

To have an effective sales department, an organization must:

1. Plan the job to be done.
  - a. Determine potentials
  - b. Set goals.
2. Hire the men to do the job.
3. Train the men to do the job.
4. Create the urge to do the job.
5. Measure salesmen performance.
  - a. 89% of lost sales and 63% of lost patrons are traceable to faults or qualities of the salesmen.

The sales manager should be selected for his ability to impart skill to others, as well as on the basis of his own selling records. I do not believe in the theory that a coach can be successful when he has not played the game. I feel that a successful sales manager must have built up, as a part of his background of experience, a solid basis for training salesmen under his direction. He must be in a position both to tell and to show them how to improve their results.

The goal of every sales executive is to have an enthusiastic, productive, and staple sales organization. An organization of this character, based on experiences of others, is the result of hard work and careful attention to the following basic conditions:

1. Careful recruitment, selection, and placement.
2. Adequate training on products, organization, procedures, and sales techniques.
3. Competent supervision and leadership.
4. Compensation which provides for recognition, incentive, and security.
5. Opportunity to get ahead.
6. Periodic opportunities to "blow-off steam."

## Turnover—Largest Hidden Cost

The greatest hidden cost in a sales department is the turnover of man-

power. The formula for hiring productive sales personnel and keeping sales at the lowest possible cost is to discover the applicant's success and failure traits in advance of employment.

Of one thing, I am sure—the person responsible for the sales job should select his own personnel or at least have final say on selection.

Let's not forget that those of us in sales supervision represent a group, who, as a rule, hold our jobs as the result of demonstrating our ability to produce. The responsibility for success or failure rests with us, and management does not point an accusing finger at the personnel director when sales slip.

It is a well understood fact that one of the most valuable assets of a business is its executive leadership. The caliber of its executives is reflected in the character and integrity of the organization.

Let us, then, examine the personalities, requirements, and qualifications of the modern sales executive, to the end that we may find inspiration and information.

1. Inspirational leadership.
2. Organizing and planning ability.
3. Courage and aggressiveness.
4. Knack of good human relations.
5. Creative imagination.
6. Willingness to delegate authority.
7. Willingness to bear full responsibility.
8. Broadminded realism.
9. Strong internal drive.
10. Business statesmanship.

**MANPOWER PRINCIPLES TO BE CONSIDERED:** It has been well said that modern business is 85% men, 10% materials, and 5% money. Putting it more directly, 85% of an executive's job is the art of handling manpower—directing, stimulating, teaching, and inspiring.

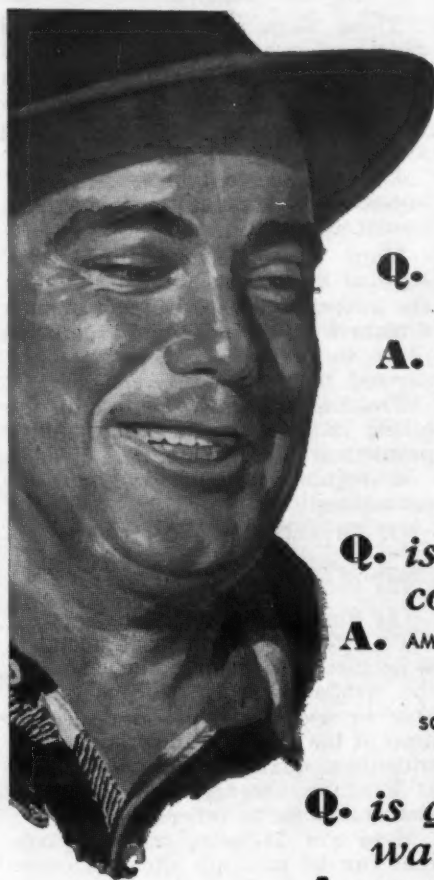
Since the handling of manpower consumes such an overwhelming preponderance of the executive's time and effort, naturally he is intensely interested in every phase of the manpower problem.

The most important sales management problem will always be manpower—selecting, training, handling, and replacing—a regular cycle! Second only to the selection of the right men is their training.

All of you, I am confident, understand that modern sales training cannot be done on a hit-or-miss basis, for the job of refreshing, inspiring and up-grading salesmen is one that is never finished. New material and new angles must be supplied continually; old fashioned training material must be revised and presented in the newest and most modern manner.

A continuous program of sales training is a necessity in view of the growing need for protection against the competition of today and tomorrow. Not so many years ago training emphasis was primarily on product knowledge. Today we have learned that good merchandising is more of a matter of people, volume, and perspectives, than merely discussing the merchandise, in other words, the salesmen must sell end results by appealing to the purchasing motives or as Jack Lacy says, "find the 'hot button' of the suspect or prospective patron.

Basically, a salesman's job is to sell, that must be mutually understood by the sales executive and salesman. Some feel that if a salesman is courteous, recognizes the patron's importance, knows his mer-



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chandise, does a good job of explaining and knows how to close, he is fully equipped for selling. The trouble is that while there may be a limited number of ways to make a sale, there are thousands of ways to lose a sale. Continuous sales training serves to enlighten the passing parade, and perhaps just as important, it enables the experienced salesmen to brush up on fundamentals. Even the best and most experienced salesmen get rusty, fall into bad merchandising habits, or forget to do a lot of things in the way they should be done to get maximum results.

Modern salesmanship demands more of a person than was the case in the past. We must teach our salesmen today how to perfect themselves in all of the qualifications of modern salesmanship and how to use these qualifications in such a way as to gain—

1. Increased number of new customers, and
2. Increased volume from established customers.

Selling is getting people to do what you want them to do.

Good salesmanship is persuasion systematized. The best of all ways to make persuasion succeed is to base it on sincerity.

Sincerity in selling will get better results in the long run than native ability or cleverness, you simply cannot beat it. When sales ability is supported by sincerity, a salesman possesses the most powerful persuasive influence known. Sincerity wins followers, customers, friends and retains them!

It costs nothing because it is a quality of the heart, rather than the mind. Any man can acquire it.

The sincere salesman gains his ends by trying earnestly to aid patrons, so that they will benefit by their dealings with him and his organization.

Many sales trainers have developed their own dramatic methods of sales training, such as Ralph Everett's race track, Jack Lacy's 5-W approach, etc. Upon analysis, however, basic sales fundamentals are the same.

In addition to its base of sincerity, the salesman must be taught that good modern successful salesmanship has four fundamentals — technical merchandising ability; knowledge of the product, its uses, the territory and the demand; an attractive personality, and economical use of time.

#### 4 PILLARS OF SALESMANSHIP

1. **Merchandising Technique**—Getting attention, arousing interest, creating desire, getting action (closing the sale or getting the order), farewell.
  2. **Knowledge**—Knowing the organization, its policies, its products, territory characteristics, demand, and competition.
  3. **Personality**—Habits and traits which attract, appearance, neatness, expression, voice, gestures, forcefulness, tact, and courtesy.
  4. **Use of Time**—Analysis of personal time use, reduction of waste, shorter sales presentation system, better self management.
- The old belief that "Salesmen are born, not made" has been proven absolutely false. The fact is salesmen are made, not born. We believe that any intelligent person can be trained to be a good salesman if he is willing to learn, makes an effort to gain knowledge, and will apply the knowledge.

#### THE SCIENCE OF SALESMANSHIP

Good salesmanship is partly an art and partly a science. It is the right combination of these that creates the ability to secure the order.

Every sale is made up of four interlocking steps. They are the AIDA formula.

1. **Attention**—Getting and keeping attention.
2. **Interest**—Arousing interest.
3. **Desire**—Creating desire.

#### 4. Action—Closing the sale or getting the order.

These steps are elementary and nearly all good salesmen understand them; however, all can profit from review. We urge mastery of them as it increases a salesman's ability to get the order.

Many of us do things by instinct but can't explain to others how they should be done.

Many salesmen have full knowledge of a product but can't impart the information to a prospect in such a manner as to cause him (the prospect) to realize the benefits to be derived from its use.

Training salesmen begins in the hiring interview and continues until promotion or retirement.

A regular training program encompasses:

- (1) Organization indoctrination.
- (2) Product or service knowledge.
- (3) Selling knowhow.
- (4) Fieldwork leadership.

To effectively train salesmen, it is necessary to have a knowledge of the available tools, to understand how to use them and a desire to keep at the job. It is understood that with these qualities must be included at least an average ability to pass instruction on to others.

Here are 21 sales training tools that can be put into effect at once:

**21 MODERN TOOLS FOR SALES TRAINING:** 1. Sales meetings, 2. Sales manuals, 3. Sales textbooks, 4. Sales training bulletins, 5. Slide films, 6. Motion pictures, 7. Special product presentations, 8. Instruction manuals, 9. Sales promotion aids, 10. Merchandising aids,

11. Radio and television aids, 12. Direct mail campaigns, 13. Visual presentations, 14. Samples, models, etc., 15. Demonstrations, 16. Trial selling methods, 17. Correspondence courses, 18. Central training schools, 19. Local training schools, 20. Field leadership training, 21. Industry or allied training schools.

1. **Sales Meetings**—One of the most valuable of all sales training tools is the sales meeting. Every sales meeting should include as a "must" a short sales training talk on a specific item. This talk should be by the sales executive.

2. **Sales Manual**—The sales training tool par excellence is the modern sales manual. The ideal sales manual is that which is broken down into five or six divisions, such as organization history, policies and objectives, products, merchandising, advertising, sales promotion and selling. The manual is more effective if it includes photographs, charts, diagrams, etc.

3. **Sales Textbooks**—A good practical textbook should be used as a basic tool for training salesmen. There are several good textbooks on salesmanship. We like Salesmanship: Practice and Problems by Bertrand R. Canfield.

4. **Sales Training Bulletins**—An associate function of any sales training effort is a series of periodic sales training bulletins on a regular basis.

5. **Slide Films**—In this day of visual training, the slide film is a potent tool. We have used them effectively and we feel that the training is seldom forgotten.

6. **Motion Pictures**—The full-fledged motion picture running from twenty minutes to three-quarters of an hour is a crowning achievement, few of us can afford them, but we can use USDA or allied industry films advantageously.

7. **Special Product Presentations**—Many a special sales presentation is written around a particular product with specific selling points that are invaluable in teaching men how to sell that product.

8. **Instruction Manuals**—An intelligently planned instruction manual that tells and shows a patron how to use a product can also function as an aid in sales training.

9. **Sales Promotion Aids**—Every

salesman should be thoroughly trained in the use of various sales promotion aids in his selling. A definite part of the training program should be devoted to the merchandising of posters, signs, streamers, displays, etc.

10. **Merchandising Aids**—One of the most important merchandising aids for salesmen is the answering of inquiries and their follow-up. Salesmen must be taught how to follow through on inquiries, so as to benefit fully from one of the most prolific sources of volume.

11. **Radio and Television Aids**—Salesmen must be shown how to use these programs in their selling, and how to stress their own programs.

12. **Direct Mail Campaigns**—Your various direct mail pieces are excellent sales training tools because they offer an opportunity to prove how effectively you back up your agencies. It aids the salesman's morale also.

13. **Visual Presentations**—The modern visual presentation is capable of assuming so many different forms that it is impossible to do more than list some of them, such as easels, flip-ups, success stories, graphs, photographs, etc. It is almost an endless array.

14. **Samples, Models, etc.**—As an appeal to the twin senses of touch and sight, samples and models are ideal training tools in that they have an additional appeal to the salesman himself.

15. **Demonstrations**—Here is one of the most effective of all training tools. Whether it is a kit, a playlet or a serious demonstration between salesmen with one man in the role of prospect, it gives the trainer a splendid opportunity to bring out the strong points and strengthen the weak ones.

16. **Trial Selling Methods**—One result of some demonstrations is the offer to leave the product with the prospect on several days trial. As in the demonstration, so this, too, is an important training tool.

17. **Correspondence Courses**—A correspondence course is only as good as the man who writes and runs it. To be of any value at all, it must be simple, practical, and down-to-earth.

18. **Central Training Schools**—Schools of this type provide for concentration of effort. It is a great morale builder.

19. **Local Training Schools**—The training that a salesman receives at local schools under the direction of a competent supervisor is extremely valuable.

20. **Field Leadership Training**—This type of sales training is unusually valuable where competent trained supervisors are available to work with the men directly in the field.

21. **Industry or Allied Training Courses**—In some instances, trade associations offer very practical sales training courses. A number of manufacturers and suppliers also make available various types of sales training courses that can be exceedingly helpful. Nutrition conferences, agricultural field days, etc., also can play a helpful part in sales training.

**TEACH OPTIMISM:** To be a better-than-average salesman, a man must be a continual and confirmed optimist. The difference between an optimist and a pessimist can well be described by a glass partially filled with water:

The pessimist says that the glass is "half empty," but the optimist says it is "half-filled."

Have you ever known a successful salesman who was a confirmed pessimist?

Helping customers buy rather than forcing them to accept products, presents its own virtues. We teach the cooperative salesmen to substitute low pressure buymanship for high pressure salesmanship. We depend on repeat orders. The old fa-

mililar high pressure peddler has almost entirely vanished from the selling scene. He was a one call salesman.

Sales training is a prerequisite to successful sales operations in the field. There is no short cut to sales success; sales training must still be given the hard way. It is axiomatic in sales training circles that training developed the hard way is easy for the salesman to digest and understand; training given the easy way is just a waste of time.

It is important to realize in teaching salesmen how to sell that they recall only 5 to 10% of what they hear from non-illustrated lectures; they recall 30 to 50% of what they see from visual presentations, such as films, charts, blow-ups, dramatic skits, etc.; they recall 50 to 70% of what they say, as when the salesman repeats in his own language the product presentation, the answer to objections, the sales closing phrases, etc.; and finally, they recall 70 to 90% of what they do, as when the salesman gets orders through the use of what he had been taught.

Sales training has worked for us. It will work for you.

## OSCAR AND PAT

(Continued from page 13)

be good pay, and some will be bad pay. In business, you always have to expect some poor-pay customers."

"They may be poor pay," Oscar agreed, "but that doesn't mean that you have to leave them alone until they get ready to pay you. You can always call on them until they get so tired of seeing you that they pay you in part or in full, ah, or maybe give you a cow or a pig. If you would spend half as much time collecting as you do working up new ideas, ah, we would get along much better, and have more money."

"If I did what you suggest, I wouldn't sell as much as I do, and so we would lose more than we would gain."

Oscar grunted. "That's how you figure," he said sarcastically. "I figure different. I like to see cash money, not just promises on paper."

"A promotion like this one will bring in lots of cash business, Oscar," promised Pat. "We'll post the proper signs, set up a lime display, even in 5 and 10 lb. bags for gardeners, group some fertilizer bags around that island and other garden supplies, and we will do business, extra business. And from both farmers and gardeners, too."

Oscar looked up at his special sign on the wall, the one with a big bottle of red ink on it, the sign which Pat had urged him in vain to remove.

"I will be watching you on this promotion," he promised. "Just like I watch your other promotions. Ah, and I will write you a note in red ink when the costs get higher than the profit. You can bet I will not forget—not even for one minute. Someday I hope you will get some sense and let the customer come in by himself and buy—like he used to in the olden days."

## Soluble Salt Equipment Found Satisfactory

**VERNON, TEXAS**—The local Soil Conservation Service unit has received an electrical instrument to be used in testing the percentage of soluble salts in irrigation water and soils.

Most of the water used in this area contains toxic salts, according to William M. Koos, soil scientist, and the new instrument, called an electrical conductivity set, will determine this percentage.

Mr. Koos says it is quite accurate and will be helpful in making recommendations for correcting the saline condition. The methods recommended are draining the land and applying gypsum to the soil.



## ENTOMOLOGISTS

(Continued from page 1)

the introduction of parasites have helped to bring a condition "approaching equilibrium," so that in the future the insect may be a pest only occasionally.

A more serious situation concerning the alfalfa aphid exists in Mexico, however, according to William R. Young and Rafael A. Pajilla, who reported on the insect's development in that country. "Since 1954, when the pest was first reported in northern Mexico, the infestation has spread southward more than a thousand miles to Oaxaca, Oax., and now covers all of the major alfalfa-producing regions of the Republic," he said.

"The results of investigations with this species conducted in high altitude regions typical of much of the alfalfa producing area of the country, indicate that most severe damage from the aphid can be expected in the spring cuttings when the population increases rapidly with the rising temperatures.

"At this time, when the predator populations develop too slowly to prevent the typical aphid injury to the crop, economic control has resulted from one application of BHC, parathion, malathion, or DDT plus cyaphene, which are being recommended pending the results of a project underway to develop alfalfa varieties with tolerance to this pest."

The status of control projects on other agricultural pests was also outlined by various speakers. The gypsy moth situation in 1957 was reported by W. V. O'Dell, USDA supervisor of the eradication program in 1957, who said that the problems of controlling this pest in the northeast, and preventing its spread to other sections of the country were aggravated by a serious outbreak in 1953.

"Subsequent surveys showed extensive spread involving more than 10 million acres of newly-infested territory," he said. "Cooperative state and federal activities to prevent further spread and to eliminate peripheral infestations accelerated in 1956 and greatly expanded in 1957," he explained.

"Approximately 4 million acres have been aerially sprayed with DDT since inauguration of the elimination program. In the summer of 1957 more than 15 million acres of territory were surveyed with sex attractant traps to detect outlying infestations. An infested area involving several townships was recently detected by trapping in northeastern Pennsylvania. Parasites and other natural control factors contributed to low incidence of defoliation in 1957 throughout the generally infested area of New England and eastern New York," he said.

The khapra beetle program in the U.S. and Mexico was described in a paper presented by L. J. Padgett. Following its discovery in California, the pest was also located in Arizona, New Mexico and Baja California, in Mexico.

The U.S. Department of Agriculture, in cooperation with the states involved, is presently engaged in a program to eradicate the pest from the North American continent. The speaker concluded that the program is apparently drawing to a successful conclusion.

Still another agricultural pest introduced in the U.S. last year (1956) was discussed at the entomological meeting, even though the pest is not an insect. It is Witchweed, the destructive parasitic plant which feeds on roots of corn, sorghum, sugar cane, crab grass and other plants of the grass family. According to J. W. Kelley, II, who reported on the weed, it is now known to occur in 10 counties in southeastern North Carolina and six contiguous counties in South

Carolina. A federal quarantine has been set up to restrain distribution of the weed to other areas, and a federal-state survey is under way to determine the areas of infestation.

Methods of mass-rearing and releasing screwworm flies and their effect after release, of interest because some of the methods will be used in the current screwworm eradication program in the Southeast, were described by U.S. Department of Agriculture scientists.

The discussions covered work done during 1957 pilot-plant operation on 2,000 square miles southeast of Orlando, Fla., to test large-scale methods of screwworm eradication by releasing radioactively sterilized male flies. This work followed the eradication of the screwworm on the Caribbean island of Curacao, with an area of 170 square miles, in 1954. The forthcoming

operation, covering 50,000 square miles, should reach maximum operation in the summer of 1958, it was indicated.

Methods of culturing and rearing 2 million sterilized flies a week for 15 consecutive weeks were given by entomologists. The laboratory brood stock was composed of a composite strain of flies taken from several areas of Florida and adapted to a laboratory environment.

The flies were kept in 20 colony cages, each stocked with 700 flies, it was explained. Female flies were induced to lay their eggs on a special meat medium placed in the colony cages. Each female laid 200 to 300 eggs, of which more than 99% hatched. Some 37.5 million flies were produced during the 15-week period. Pupae were irradiated with gamma rays from cobalt-60, at the rate of 18,000 pupae per 6½ minutes. Actual irradiation time was 16 hours a week for 2 million sterilized flies.

Participating in the meeting presentation were A. J. Graham and F. H. Dudley, who discussed culture

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methods for mass-rearing screwworm larvae and C. N. Husman and A. H. Baumhover, who discussed mechanical devices for dispersal of sterilized screwworm flies from aircraft. Mr. Baumhover, Clinton C. Skipper and Weston D. New discussed field observations on the effects of releasing sterile screwworms in Florida.

That the common house fly is apparently developing increased resistance to most of the contact sprays now in use, was stated by G. C. Labrecque, U.S. Department of Agriculture entomologist. He told the group that tests conducted over the past three years in Florida indicate that flies are becoming increasingly resistant to organophosphorus insecticides, presently used for fly control in poultry houses and dairy barns. These insecticides replaced other spray materials to which flies had become highly resistant, he said.

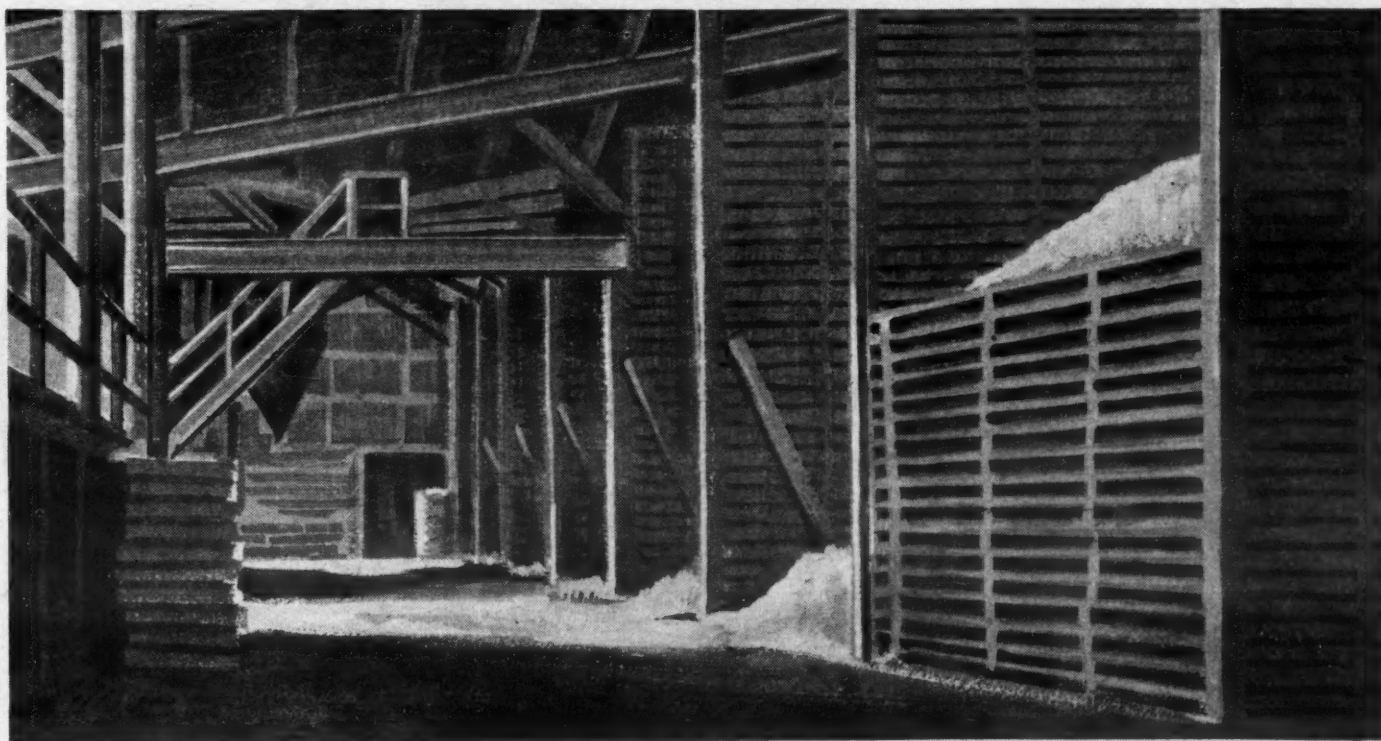
Our ability to wipe out major crop and livestock pests stands as one of the significant scientific accomplishments of this century, Dr. M. R. Clarkson, deputy administrator of the

(Continued on page 21)

## Make sure it stores till spring

This time of the year, when you're busy moving inventory to warehouses or dealers, ask yourself this question:

"Have I done everything possible to make sure my mixed goods will store until spring?"



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## AGRONOMIST TELLS GROUP . . .

# Fertilizer Pays Best When Used as Integral Part of Over-all Farming Program

By J. W. FANNING\*

Head, Department of Agricultural Economics,  
University of Georgia

Men who deal in fertilizer and those who serve in the field of agronomic research and extension are interested in economics—and the science of farm management. These came into being mainly from the study of land use and other agronomic problems.

It is well to consider often the broad nature of some of our problems. We are becoming highly spe-

cialized along subject matter lines. One of the difficulties with specialization is the feeling we sometimes have that the specialist has the answer. He doesn't. He has only part of the answer.

The farmer puts together the answer for his business—and it's blending of ideas and information he secures from many sources—including specialists and his own

experiences. I quite often marvel at the balanced and sound judgment of farmers. I know of no group that has a greater number of advisers—those who can tell him the things he ought to be doing. He listens to all—goes home—and builds a program that he thinks will make him the most money—or lose him the least.

Speaking of fertilizer, farmers in Georgia used a lot of it in 1956. Actually, 1,247,014 tons, or about five per cent more than in 1955. Our farmers made very good yields. Corn averaged 24 bu. an acre, wheat 21 and oats 33 bu. Tobacco turned 1,452 lb. an acre. Cotton did 334 lb., against a 1946-55 average of 264 lb. an acre. Peanut yields exceeded 1,090—almost 300 pounds above the 1946-55 yield.

Yet, farmers' composite net incomes in Georgia in 1956 dropped \$10,500,000 from that of 1955. Why? What caused this drop in income? Was it that our farmers failed to use enough fertilizer or did they use

too much? Or maybe it was the lack of insect and disease control? Probably prices dropped at the wrong time? Or it could be that our efficiency in handling livestock was not too good.

A closer examination revealed that farm commodity sales actually increased 21 million dollars over 1955. The trouble came when production expenses rose by \$31,500,000. There is the catch, but what caused it is a tough question.

I think we can conclude one of three things. Either farmers are (1) not getting maximum and most efficient returns from their resources—or (2) they are using too much of some resources in relation to the basic income producing potentials of the businesses—or (3) price-cost relationships were so far out of line as to partially offset the values that come with top efficiency. We could spend some time in analysis—and that is what any good farmer must do at the end of the year. He must look at each resource and judge whether it gave him the returns it should—and contributed to his income as much as he must for his business to move ahead.

Let's look at the fertilizer input. It was not a heavy item of expense in relation to other expenses. Actually, it was only between 12 and 13% of all production expenses. Fertilizer expenditures were actually less than 10% of cash receipts. Neither is out of line—but I would hesitate to say that by merely increasing the use of fertilizer in 1958 farmers would increase their net income.

The reason I wouldn't say it is that there are more factors than fertilizer at work affecting farm profits. We might, therefore, study fertilizer carefully and as well as we can in the setting of these other factors and in relationship to them. This is the responsibility of the economist and he does not do it to reduce the use of fertilizer but to help farmers understand how fertilizer can be used more profitably—and under what conditions it will pay him to increase the amount of fertilizer he uses.

Agronomic research has the basic information upon which all fertilizer use program must be projected. Through this research, yield response to fertilizer is determined—and yield at different levels of fertilizer application can be determined. These physical data are the first, they are the primary and the most important of all information. Here lies the source of the facts upon which we have made progress.

It has been the good fortune for us in economics to work closely with the men in agronomic research and extension. We appreciate the excellent relationships that exist. It has given us the opportunity to apply economic analysis to much of the physical data and to provide assistance to the agronomist in the development of his recommendations. Also, it has furnished the farm management men with facts on those things that affect the most profitable utilization of fertilizer for use in educational work with farmers. Oftentimes gross income is not a fair measure of net income—and the farm management specialist is trained to help farmers place their sights on the highest net income.

Let me call your attention to a few discoveries made when economic study was applied to fertilizer use research.

1. In a study of fertilizer use on Coastal Bermuda grass it was found that under the right circumstances farmers can apply much higher rates of fertilizer (particularly nitrogen) than called for in general recommendations. At \$30.00 a ton for hay at the farm, up to 600 lb. nitrogen were profitable for a favorable growing season and with the acreage of land limited, but only 200 lb. for an unfavourable

\* Before Southern Soil Fertility Conference, Atlanta, Ga., Nov. 1.

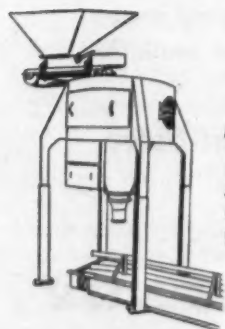


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by

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## \$10 MILLION LOSS

LOGAN, UTAH—Ten million dollars in damage was done to livestock, gardens, ranges, households and stored food products in Utah last year by insects, a Utah entomologist has estimated. Thirty species of aphids, stink bugs, worms, caterpillars, mites, flies, beetles and other insects caused above-normal damage during the year, said Dr. G. F. Knowlton, Utah State University extension entomologist.

avorable season with land unlimited. Under other circumstances, such as when hay or cattle prices are lower, and is not limited and the protein content of hay is not an important factor, lower rates of fertilizer use were most profitable. In some individual cases the rates were much lower.

Prices received by farmers and weather have a lot to do with how much fertilizer a farmer can use profitably. A drop in the general level of cattle prices like that which came in 1951 and 1952 changes levels of profitable fertilizer use rather quickly. Studies show that as prices decline, they cannot be offset profit-wise through substantial increases in fertilizer use, where there's no change in the price-cost relationship of the crop and fertilizer.

2. On small Piedmont farms with limited amounts of capital, farmers found they could not use fertilizer heavily. But for those small farms with almost unlimited capital, they could use up to 40% of all cash expenses for fertilizer expenditures.

It's important to watch this matter of capital available to farmers in making fertilizer recommendations. Farmers with limited capital must make very wise selections in how it will be used—and our studies show that fertilizer must be used with great care.

3. Our studies with the agronomists show a good deal of variation in the profitability of fertilizer on soils of different productivity levels. The same fertilizer applications on soils of high productivity returned, in some cases, almost twice the profit as for soils of low productivity. This is a very important consideration.

Our concern is to help individual farmers appraise profit potentials for fertilizer at varying rates and under different use situations. Obviously a farmer who fertilizes Coastal Bermuda grass highly, but fails to use improved livestock production practices will fail to make money from his fertilizer and is likely to revert to his former use level. The person who fails to protect his crop against disease and insects cannot make the most profitable use of his fertilizer. And more than likely the fertilizer will get the blame for the poor profits.

Price forecasting is tremendously important in recommending fertilizer to farmers. At present, beef cattle prices are looking up and well fertilized high quality pasture grasses will pay greater profits. Farmers would do well to consider this. But hogs don't look too well. As a matter of fact, the outlook is for some very low prices in the late fall of 1958 and winter of 1959. Here's a caution sign to watch your risk if you are depending upon hogs to use all of your feed. May I add here that the livestock specialist needs to join the group in giving consideration to the full and most profitable use of fertilizer.

Basically, a soil fertility program is a team approach with the agronomist serving as captain. As economists, we are delighted to serve on this team. Tremendous change has been wrought in our production. We are building new patterns of farming. Farmer risks are high and an adversity in operations can break a farmer quickly.

As this team helps our farmers to understand soils, their fertility, the

role of fertilizer, response of plants to fertilizers at varying levels, prices, markets, capital and other factors affecting fertilizer use and farm profits, we will move on to better farming and agriculture that will absorb increasing inputs of fertilizer and other productive resources at higher profit levels.

## Hercules 4-H Entomology Winners Announced

CHICAGO—The six national winners of \$400 college scholarships in the National 4-H Entomology Awards Program were announced here Dec. 2 at the opening of the 36th National 4-H Club Congress. This is the sixth year of competition in the Entomology Awards Program, sponsored by Hercules Powder Co. Forty six states were entered in the program this year.

The six scholarship winners are: Joe W. Simmons, California; Larry Ulmer, Jr., Delaware; Jack Jewell,

Kansas; Howard E. Breland, Mississippi; Jesse Malone, Jr., Montana; and David C. Johnson, Virginia.

The winners of the six college scholarships were selected from the list of state winners. All state winners received, as their award, an all-expense trip to the National 4-H Club Congress here. In addition to awards for national and state winners, county winners received gold-filled medals. All awards are provided by the sponsor of the program.

A dinner honoring the national and state winners was given by Hercules. Hercules officials present at the supper included Paul Mayfield, vice president.

## BUILDS FOREIGN PLANT

LOS ANGELES—Beckman Instruments, Inc., has announced that construction is well underway on a \$250,000 manufacturing plant at Glenrothes, Scotland, which will house the company's newly-formed subsidiary, Beckman Instruments, Ltd.

## Daniel W. Hoffman To Retire Swift Post

PORTLAND, ORE.—Terminating service of more than 38 years, Daniel W. Hoffman will retire on pension Jan. 1 as head of Swift & Co. zone purchasing transportation department at North Portland. Mr. Hoffman started with Swift & Co. here after military service in World War I. He has headed the purchasing department since 1920 and was given the additional transportation duties in 1932. The department is responsible for purchasing and transportation for all Swift units in Oregon, Washington and Idaho.

Mr. Hoffman will be succeeded as head of the purchasing-transportation department by Arthur D. Venator who started with Swift at North Portland in 1934 and has been in purchasing and transportation work since 1936.

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**3. APPLY THE FULL AMOUNT** of mixed fertilizer and Lion brand Ammonium Nitrate soil tests indicate. Don't skimp—fertilizer is the least expensive item you use for crop production.

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## NEW JERSEY MEETING

(Continued from page 1)

"The public is entitled to know what it must do to protect itself."

More labeling will continue in the face of the realization that it is "the most expensive literature in the world."

Much of the expense behind the label is caused by the high cost of pharmacology work that must be done to establish tolerances. Mr. Ward pointed out that one goal is establishment of effective dosages that will leave no residues, and hence make it possible to set aside the expensive pharmacology work.

"But how much is zero?" he asked. "Some pharmacologists say zero is impossible to define—if there is any residue at all, it is too much."

Mr. Ward mentioned the close cooperation between industry and extension men in the use of products.

"But as yet we are unable to assure even the extension man with all the background we can get, that exact compliance with the label will insure the grower of results every time. This explains why we are correcting labels every day."

The newer insecticides are more likely than some of the older ones to have fully-adequate labels because of the close study made of tolerances and residues on the new ones, the speaker continued.

Mr. Ward reminded his audience of dealers, manufacturers, research and extension men that "we are as yet in a period of transition, and to the best of my knowledge every group working in this area is satisfied that the Miller Bill was designed and introduced to protect the public, and should be given an opportunity to work."

Other speakers at the conference that attracted 146 men from industry were Rutgers research and extension workers who reviewed last

season's work and explained changes in recommendations for 1958.

Dr. Leland G. Merrill, extension entomologist, described the pepper weevil, newly discovered in South Jersey this year, and said there is some doubt that it will over-winter in the North, since it has been found most often in the Gulf states. Two-spotted mites on strawberries and tomatoes were "tremendous" in some cases, he said.

Dr. Byrley F. Driggers, research specialist in fruit insects, outlined rather encouraging results with a selective spray schedule tried on three experimental blocks of apples to encourage parasite and predator control of unwanted pests. Much to his surprise, he said, some predators came back in one year.

Dr. Donald A. Schallock, extension weed control specialist, devoted much of his time to a discussion of the use of dinitro in weed control. He warned particularly about the susceptibility of cauliflower and other cabbage family crops to the chemical, and to the special danger to fruit trees at blossom time.

Dr. Schallock had a special word of warning about adjusting the rate of dinitro to the temperature to avoid crop injury. A sudden rise in temperature spelled disaster for one of his experiments in which the application rate was geared to a cooler day, he said.

Dr. Merrill and Dr. Spencer H. Davis, extension plant disease specialist, arranged the conference. Moderator was Charles W. McDougall, associate agricultural extension leader.

Those who attended took home a 65-page mimeographed booklet of tentative recommendations for next season.



**NEW JERSEY SESSION**—Scenes above are from the recent Rutgers University pesticide dealers' conference, held at New Brunswick, N.J. The top photo shows Justus Ward, U.S. Department of Agriculture pesticide regulation chief, in an informal question and answer session. From left to right are Mr. Ward; Dr. Stacey B. Randle, state chemist at Rutgers; Robert J. Sutton, Stauffer Chemical Co., New York, and Dr. Bailey B. Pepper, chairman of the Rutgers entomology department. In the lower photo industry representatives show interest in Dr. Leland G. Merrill's European corn borer expectancy chart. From left to right are Dr. Merrill, extension entomologist at Rutgers; George Schumaker, Velsicol Chemical Corp., Chicago; Miss Margaret Greenwald, Chipman Chemical Co., Bound Brook, N.J.; E. J. Thayer, the Du Pont Co., and Irvin Baker, Seacoast Laboratories, New Brunswick.

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## CORN ACREAGE

(Continued from page 1)

mestic food, feed, seed and industrial use during the 1957-58 marketing year and exports of 185 million bushels for the 1958-59 marketing year, plus a 15% carryover allowance of 489 million bushels.

With an estimated carryover of 1,450 million bushels on Oct. 1, 1958, production of 2,299 million bushels would be needed from the 1958 crop to meet the normal supply requirement of 3,749 million bushels, USDA said.

Of the estimated 2,299 million-bushel production required for 1958, a total of 525 million would be ex-

pected to be produced in the states and counties outside the commercial corn area, including imports of about 1 million bushels. This would leave 1,774 million bushels needed in 1958 from the 932-county commercial producing area. (Production needed from the two areas is adjusted to reflect the addition of 38 counties to the commercial area and the reduction of a like number from the non-commercial area.)

On the basis of the average yield (1953-57, adjusted for abnormal weather conditions) of 45.7 bu. per acre, the indicated acreage needed to produce the 1,774 million bushels in the commercial area would be 38,818,381 acres, USDA said.

When acreage allotments are in effect, compliance with farm allotments is a condition of eligibility in the commercial corn-producing area for price support at the full rate. Acreage allotments do not apply in the noncommercial area.

Farmers who comply with 1958 acreage allotments will be eligible to participate in the soil bank program.

## SEA WATER PROCESS

**INGLESIDE, TEXAS**—Fertilizers are being produced from sea water by a pilot plant set upon Laguna Madre a year and a half ago. The plant was set up by Deep Sea Minerals, Inc., Lake Geneva, Wis. Dave Miller, superintendent, says the minerals are extracted simultaneously by a chemical-organic precipitation process. The resulting product is called Ompo, a mineral fertilizer in organic form. It can also be used as a mineral supplement in livestock feed, he said. William Yates, research chemist who was with Morton Salt for 30 years, pioneered the process used here.

1958 Corn Allotment Program				
State	No. of counties in commercial area		Total acreage allotment for commercial corn counties	
	1958	1957	1958	1957
*Alabama . . .	17	8	609,253	303,314
Arkansas . . .	4	4	87,543	87,706
Delaware . . .	3	3	108,440	108,971
*Florida . . .	5	0	111,906	0
*Georgia . . .	28	14	696,731	378,147
Illinois . . . .	102	102	5,955,360	5,857,909
Indiana . . . .	92	92	3,097,900	3,016,533
Iowa . . . . .	99	99	6,983,516	6,862,686
Kansas . . . .	23	23	911,266	905,079
Kentucky . . .	52	52	933,289	909,810
Maryland . . .	16	16	281,175	263,825
*Michigan . . .	37	35	1,102,795	995,695
Minnesota . . .	60	60	3,516,160	3,436,176
*Missouri . . .	73	72	2,436,121	2,381,250
Nebraska . . .	61	61	4,171,542	4,172,390
New Jersey . .	11	11	106,867	104,900
N. Carolina . .	32	32	860,675	850,262
N. Dakota . . .	1	1	73,723	71,182
Ohio . . . . .	71	71	2,200,847	2,156,784
Pennsylvania . .	31	31	577,776	562,079
*S. Carolina . .	2	0	50,021	0
S. Dakota . . .	32	32	1,972,373	1,948,675
Tennessee . . .	25	25	464,691	458,135
*Virginia . . .	15	10	156,175	123,548
W. Virginia . .	2	2	16,223	15,835
Wisconsin . . .	38	38	1,336,013	1,297,998
Total . . . . .	932	894	38,818,381	37,280,889

\*State acreages are not directly comparable for the two years because of changes in the number of counties included in the Commercial Corn Producing Areas.



## ENTOMOLOGISTS

(Continued from page 17)

U.S. Department of Agriculture's research service, told the entomologists.

"The 20th century marks the first time since the locusts plagued the Egyptians that man has dared to think it practical to wipe out major pests," he declared.

He listed three current eradication programs as examples of the modern theory of eliminating pests where possible rather than trying to "live with" them.

One of these programs is against the screwworm in the Southeast, another is directed at the imported fire ant, which damages a number of crops and is also harmful to animals, birds, and man. This program is already underway in Louisiana, Georgia, and South Carolina, and will soon commence in 6 other Southern states, Dr. Clarkson reported.

A long-range eradication program is also in progress against the gypsy moth, a destructive pest of trees in the northeastern part of the country.

Recent successes against the Mediterranean fruit fly and the khapra beetle were cited by Dr. Clarkson as outstanding examples of the value of eradication work.

The khapra beetle, which Dr. Clarkson described as possibly the "worst pest of stored grain products," has been responsible for the most spectacular and successful fumigation program ever conducted. About 140 million cubic feet of warehouses, elevators, barns, and even residences, have been "wrapped" in plastic tarpaulins and fumigated to eliminate beetles—many of which were hidden in small inaccessible cracks, he pointed out.

Eradication work was described by Dr. Clarkson as one phase of the progress that has been made in pest control. Other measures include: quarantines to protect against the introduction into this country of damaging pests from abroad; a disease and insect reporting system; and state quarantine and regulatory measures to contain and control some pests, when eradication programs are not considered feasible.

## G.L.F. FIRE

(Continued from page 1)

than gasoline, was being pumped from a railroad tank car into a 10,000-gal. storage tank. The workman in charge, believing from office records the storage tank was nearly empty, left the scene for a few minutes. When he came back, the chemical was overflowing through a vent in the storage tank.

The spilled xylene ran down an outside stairway into the boiler room. Employees turned out the boiler and called Big Flats Volunteer Fire Department.

LeRoy Peterson, fire chief, said the chemical was two inches deep on the basement floor when firemen arrived. Chemical was in the base of the boiler and there was smoke around the base of the boiler. Mr. Peterson said xylene probably was burning inside the boiler. Firemen had just started to put on sand to soak up the xylene when it ignited.

According to L. A. Allen, fire protection engineer, as the firemen threw on sand, some of the chemical probably spattered on the side of the hot boiler and ignited.

With the fire out of control, firemen confined their efforts to cooling down four 30-ft. storage tanks containing explosive chemicals.

No water was available at the plant, and firemen brought water to the fire from a pond in tank trucks. Storage tanks at the plant are not equipped with gauges and there are no dikes around the tanks.

## National Distillers Gets Full Ownership of National Petro-Chemicals

NEW YORK—National Distillers & Chemical Corp. and Panhandle Eastern Pipe Line Co. have announced that the boards of directors of both companies have approved the acquisition by National Distillers of Panhandle's 40% minority interest in National Petro-Chemicals Corp. which will thus become a 100%-owned subsidiary of National Distillers.

National Petro owns and operates a petro-chemicals plant in Tuscola, Ill., and recently announced the construction of a second polyethylene plant in Houston, Texas.

The transaction, which will be completed before the end of 1957, will involve the exchange by Panhandle Eastern of its 40% interest in National Petro for 1,500,000 shares of the common stock of National Distillers.

John E. Bierwirth, president of National Distillers, and W. P. Maguire,

president of Panhandle, stated that the expansion of National Petro beyond the original plan makes the full acquisition by National Distillers, which has operated the company since organization, a desirable step and provides Panhandle Eastern with further diversification.

As originally conceived, Petro's basic raw material was hydrocarbon extracted from Panhandle's natural gas pipeline at Tuscola. The new polyethylene plant in Houston, however, will use ethylene purchased from another source.

## New York Meetings

GENEVA, N.Y.—A series of seed and fertilizer dealer meetings will be conducted by Cornell University during December and January. They will be held at Batavia Dec. 10, Canandaigua Dec. 11, Little Valley Dec. 12, Hornell Dec. 13, Binghamton Dec. 16, Liverpool Dec. 17, Gouverneur Dec. 18, Glenmount Jan. 7 and Pleasant Valley Jan. 8.

## Witchweed Regulated Areas Extended in North, South Carolina

WASHINGTON — Changes have been made in the localities regulated under the federal witchweed quarantine in 10 North Carolina and 5 South Carolina counties, effective Dec. 3, the U.S. Department of Agriculture has announced.

Relatively small areas have been included under regulation for the first time in Duplin, Pender and Richmond Counties, North Carolina; and Florence County, South Carolina.

Present regulated areas have been enlarged due to the finding of witchweed in the North Carolina Counties of Bladen, Columbus, Cumberland, Harnett, Hoke, Sampson and Scotland; and the South Carolina Counties of Darlington, Dillon, Horry and Marion. Fairly extensive increases in area have been necessary in all except Harnett County, North Carolina, and Darlington and Horry Counties, S.C.

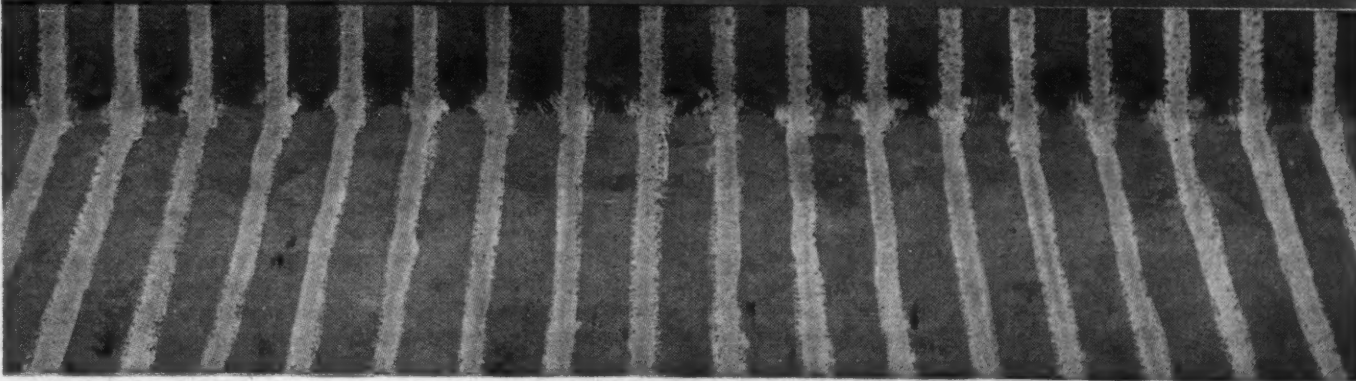
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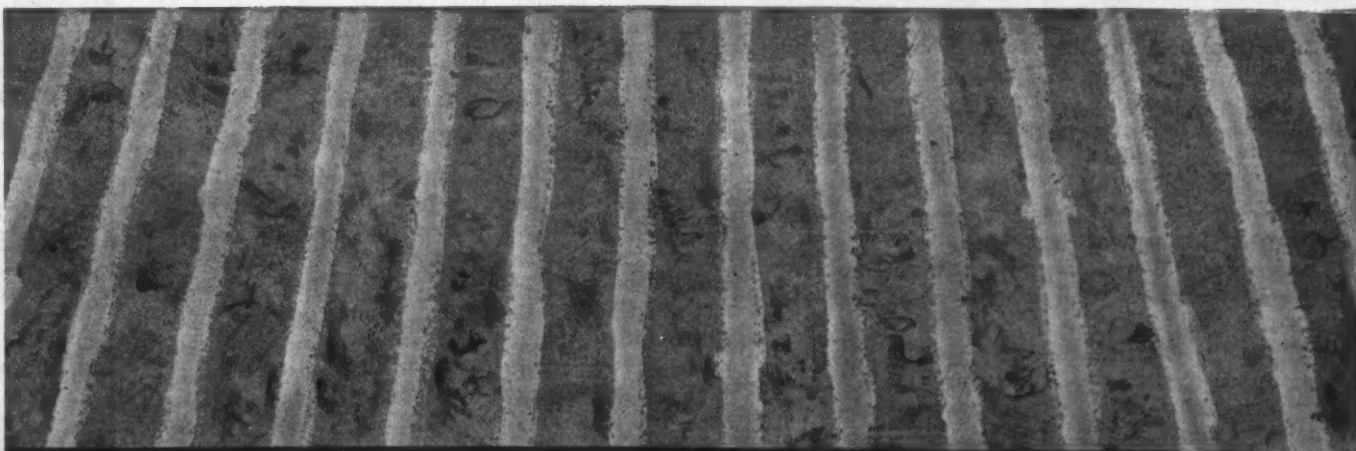
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# Croplife

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Midwestern states.

## VIEWPOINT . . .

### Field Experiment Gives Truer Picture of Given Situation, Prevents Error and Waste

By Dr. Vincent Sauchelli  
Chemical Technologist  
The National Plant Food Institute

Whether a given problem comprises increasing yields, or the introduction of a new fertilizer, or the quality of crops or a new or modified rotation, the best way to solve it is by a carefully planned program of field experiments. Experience of agricultural workers in all countries emphasizes that such field experiments provide the most acceptable basis for judgment—nothing else can take their place.

Greenhouse and laboratory studies have their place as preliminary phases, of course. They can help in getting certain leads that are useful in organizing the field tests. But laboratory and greenhouse facilities cannot reproduce exactly the many diverse factors which prevail in the open fields, any one of which may influence critically the manner in which a chemical or cultivation treatment or crop variety performs. Laboratory tests of soils, unless closely correlated with field experiment results, can give misleading, costly information. Hence, the only satisfactory method of finding our answer to the farmer's question—What can one expect of a certain treatment in practice?—is to carry out a good program of statistically designed and appraised field experiments.



Dr. Vincent Sauchelli

These thoughts were jotted down after reading a most interesting paper\* on how some so-called technically backward countries have planned and conducted comprehensive programs of field experiments as a basis for fertilizer recommendations.

For example, in India field experiments on a large scale in several regions indicated that nitrogen gave a fairly constant response if water was adequate and it paid to recommend a general small application. All farmers doing this would get a profitable return and the fertilizer would not be misused. Also, it had been generally thought in India that it did not pay to use phosphate; but a series of well-planned experiments showed regions where phosphate was critical and paid handsomely when applied and it was not wasted even in areas where it was not required.

Agricultural China is another example. A series of factorially designed field experiments were carried out throughout central and western China during the last World War years. The results have been used to recommend profitable usage of fertilizers on many crops.

Similar large scale field experiments designed along modern statistical lines have been carried out in Kenya and the Gold Coast with equally satisfactory results.

It is safe to say few of the large, technically advanced countries have made such a large systematic attack as these on soil fertility problems to determine the best fertilizer ratios and rates. Perhaps these countries having a long tradition of fertilizer usage think they know the answers without the extensive field trials. One thing they fail

to consider in their complacency is that the nutrient status of a soil is constantly changing, and that what was true twenty or thirty years ago is not necessarily true today.

New fertilizer materials and new crop varieties have been developed and are now in use which require a new "look-see" regarding fertilizer usage. A region, for example, where fertilizer ratios high in phosphorus have been traditionally used for a generation may today be more in need of relatively higher quantities of nitrogen and potash and perhaps some trace elements.

There is need in all regions for a continuing program of field experiments or repeat work on a smaller scale every decade or two in order to become aware of major changes that occur. A soil's nutritional status is not static. Unless this is done, the chances favor the inefficient and wasteful use of fertilizers.

### Let Soil Tests Be Guide To Fertilizer Application

Soil experiments at the University of Missouri have shown that farmers in that state who have been purchasing corn from outlying regions rather than to plow up farming areas where meat, milk, wool and eggs are produced, can grow much of their own corn on their best land.

Doing this, of course, would require much more fertilizer than has been considered adequate, but the experiments have shown that it is cheaper to buy nitrogen for grain growing than to produce it with intermediary legume crops.

Under this plan, the experimental yields of both corn and oats ranged up to 76 and 78 bushels, respectively, the station reports. "Measurements of soil moisture also indicated that the yields could have been still higher if moisture deficiencies in the deeper levels had been corrected by irrigation," it adds.

So successful have been these experiments, it is reported, that the station suggests: "In many instances, it is more profitable to add fertilizer—according to soil test recommendations—on land already in the farm than to buy additional acres."

### Full Steam Ahead for NPFI Educational Plan

Groundwork for the extensive educational and development program of the National Plant Food Institute is very nearly complete now, and the entire project is strengthened considerably by the decision of six potash producers to continue with the NPFI in its broad effort. The inclusion of these important companies in backing the program will add great impact in the over-all plan. The entire industry, and agriculture itself, will benefit over the years.

Many expressions of happiness have been voiced around the trade upon hearing news of the potash firms' decisions to lend their strength to the NPFI program. A harmonious, united effort being put forth by all segments of the plant food industry can accomplish the desired ends far better than could the same individuals working alone.

The comprehensive program of the NPFI can move ahead now with full confidence, with all the participants reasonably assured that the end results will be beneficial.

\* Outlook on Agriculture, Vol. 1, No. 3, 1956.



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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is \$5 for one year (\$8 a year outside the U.S.). Single copy price, 25¢.

LAWRENCE A. LONG

Editor

DONALD NETH

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# MEETING MEMOS

Dec. 11—North Dakota Fertilizer Dealers Meeting, North Dakota Agricultural College, Fargo, N.D.

**EDITOR'S NOTE** — The listings above are appearing in this column for the first time this week.

Dec. 8-12—Vegetable Growers Association of America convention, Jung Hotel, New Orleans, La.

Dec. 9—Soils and Fertilizer Short Course, St. Paul Campus, University of Minnesota.

Dec. 9-12—Chemical Specialties Manufacturers Assn., Hollywood Beach Hotel, Hollywood, Fla.

Dec. 10-12—North Central Weed Control Conference, 14th Annual Meeting, Hotel Savory, Des Moines, Iowa. Lyle A. Derscheid, agronomy department, South Dakota State College, Brookings, Program Chairman.

Dec. 11-13—Agricultural Ammonia Institute, Seventh Annual Meeting, Hotel Marion, Little Rock, Ark., Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

Dec. 12-13—Beltwide Cotton Production Conference, Hotel Peabody, Memphis, Tenn.

Dec. 18-19—Shell Nematology Workshop, Drayton Hall, University of South Carolina, Columbia, S.C.

Dec. 19-20—Missouri Soil Fertility Short Course, University of Missouri, Columbia, Mo.

1958

Jan. 7-8—Texas Fertilizer Conference, Texas A&M, College Station, Texas.

Jan. 8-10—Northeastern Weed Control Conference, Hotel New Yorker, New York, R. J. Aldrich, Rutgers University, New Brunswick, N.J., Secretary.

Jan. 9-10—Mississippi Insect Control Conference, State College, Miss.

Jan. 13-14—National Cotton Council of America, twentieth annual meeting, Westward Ho Hotel, Phoenix, Ariz.

Jan. 13-15, 1958—Weed Society of America and Southern Weed Conference, joint meeting, Peabody Hotel, Memphis, Tenn.

Jan. 14-15—Georgia Plant Food Educational Society, Annual Meeting, University of Georgia, Athens, Ga., Fielding Reed, 710 Mortgage Guarantee Bldg., Atlanta, Ga., Secretary-Treasurer.

Jan. 14-16—Nebraska Fertilizer, Machinery and Chemical Exposition, Sponsored by the Nebraska Fertilizer Institute with the Nebraska College of Agriculture, Pershing Auditorium, Lincoln, Neb.

Jan. 20-21—Pest-O-Rama, sponsored by the Alabama Association for Control of Economic Pests, Coliseum, Montgomery, Ala., W. G. Eden, P.O. Box 626, Montgomery, Ala., Secretary-Treasurer.

Jan. 21-22—North Carolina Pesticide School, College Union Bldg., North Carolina State College, Raleigh.

Jan. 21-22—Illinois Fertilizer Industry Conference, University of Illinois, Urbana, Ill.

Jan. 21-23—California Weed Conference, San Jose, Cal.

Jan. 22—Oregon Fertilizer Dealers Day, Oregon State College, Corvallis, Ore.

Jan. 22-23—Northwest Agricultural Chemicals Industry conference, Hotel Benson, Portland, Ore. (In connection with N.W. Vegetable Insect Conference and Western Cooperative Spray Project.)

Jan. 23-24—Tenth Illinois Custom Operators School, University of Illinois, Urbana.

Jan. 30-31—Colorado Agricultural Chemicals Assn., Annual Meeting, Cosmopolitan Hotel, Denver.

Feb. 4-6—North Carolina Pest Control Operators' Short Course, College Union, Raleigh, N.C. Clyde F. Smith, Dept. of Entomology, N.C. State College, secretary.

Feb. 10-11—Southwestern Branch, Entomological Society of America, annual meeting, Shamrock Hilton Hotel, Houston, Texas.

Feb. 13-14—Agronomists-Industry Joint Meeting, Edgewater Beach Hotel, Chicago, sponsored by the Middle West Soil Improvement Committee, Z. H. Beers, 228 N. LaSalle St., Chicago 1, Ill., Executive Secretary.

Feb. 20-22—Nitrogen Conference, University of Minnesota, St. Paul. M. W. Mawhinney, Smith-Douglass Co., Albert Lea, Minn., Chairman.

March 4-5—Western Cotton Production Conference, Hotel Cortez, El Paso, Texas, Conference Sponsored by the National Cotton Council and the Five State Cotton Growers Assn.

April 22—Western Agricultural Chemicals Assn., Spring Meeting, Hotel Biltmore, Los Angeles; C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., executive secretary.

June 9-11—Association of Southern Feed & Fertilizer Control Officials, Heart of Atlanta Hotel, Atlanta, Ga., Bruce Poundstone, University of Kentucky, Lexington, Ky., Secretary-Treasurer.

June 15-18—National Plant Food Institute, Annual Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 25-27—Pacific Branch, Entomological Society of America, San Diego, Cal.

July 8-10—Pacific Northwest Plant Food Assn., Ninth Annual Regional Fertilizer Conference, Pocatello, Idaho.

July 18-19—Southwest Fertilizer Conference and Grade Hearing, Bucaanier Hotel, Galveston, Texas.

Oct. 22-24—Pacific Northwest Plant Food Assn., Annual Meeting, Gearhart, Ore., Leon S. Jackson, P.O. Box 4623, Sellwood-Moreland Station, Portland, Ore., secretary.

## Red River Valley Potato Beetles Show Resistance to DDT

ST. PAUL—Potato beetles in Minnesota's Red River Valley apparently have built up strong resistance to DDT. At least, that's the indication from recent research, according to L. K. Cutkomp, University of Minnesota entomologist.

He compared potato beetles from Minnesota's Red River Valley with beetles from near Ottawa, Canada—an area in which DDT had never been used and where potato beetles wouldn't be expected to have any resistance to the insecticide.

Dr. Cutkomp injected the beetles with varying dosages of solutions containing DDT. Dosages that killed Canadian beetles had practically no harmful effect on the Minnesota beetles.

## Meyer Appointment

PORTLAND, ORE.—Raymond W. Holmberg has been promoted from the office staff to the sales staff of Wilson and George Meyer and Co. He will assist Jack M. McConkey, manager of agricultural sales in Washington and Montana, by operating in western Washington. Mr. Holmberg joined the Meyer organization in 1955.

## Census Bureau Reviews Commodity Inquiries For 1958 Report

WASHINGTON—The Bureau of the Census is reviewing commodity inquiries included in the 1954 Census of Manufactures forms to determine how they should be adapted for use in the 1958 Census. In order to have the census forms reflect the needs of those who report or use the statistics, the Bureau of the Census is circulating the proposed product inquiries to representative groups in industry and government.

The bureau says its files do not contain any recommendations for changes in the 1954 Census of Manufactures product inquiry. It requests that it be advised of significant changes in the industries involved since 1954 which are not adequately reflected in the unrevised product inquiry form.

The bureau says that it has tentatively concluded that new items should be included only if their 1958 value is expected to amount to over fifteen million dollars. Small items on the 1954 product inquiries are being reviewed to determine whether they should be collected separately in 1958. They are being eliminated if they were valued in 1954 at less than five million dollars, unless the item is needed to simplify the classification or instructions regarding other products or it is of strategic importance.

Individuals and organizations are invited by the bureau to contact the Industry Division, Bureau of the Census, U.S. Department of Commerce, Washington 25, D.C., for copies of 1958 Census product inquiry drafts for industry groups in which the individual or organization is interested.

## Dyrene Registered for Use On Potatoes, Tomatoes

NEW YORK—Dyrene, a new fungicide, has been registered by the U.S. Department of Agriculture for use on potatoes and tomatoes.

A product of Chemagro Corp., New York, Dyrene is being recommended by the firm for the control of early blight, late blight, anthracnose, septoria leaf spot and gray leaf spot on tomatoes, and for early blight and late blight on potatoes.

A foliage fungicide, Dyrene has been field tested intensively for the past several years. In these tests, the yield-per-acre after treatment with Dyrene has averaged 50-100% higher

## Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge \$2.25. Situations wanted, 10¢ a word; \$1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Advertisements of new machinery, products and services accepted for insertion at minimum rate of \$10 per column inch. All Want Ads cash with order.

## BUSINESS OPPORTUNITIES

**BUILDING AND MACHINERY FOR SALE:** Remaining skeleton steel structure and concrete work at Fargo, N. D. Survey and make us an offer. Also 7 Syntron Vibra-Flow Feeders. Write for specifications on feeders. Address all correspondence to Ted. B. Schultz, Asst. General Manager, Peavey Elevators, 809 Grain Exchange, Minneapolis 15, Minn.

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than the yield of untreated check plots, Chemagro said.

Official tolerances for Dyrene residues, established by the Food and Drug Administration and published in the Federal Register of Oct. 24, are 10 ppm. for tomatoes and 1 ppm. for potatoes.

Field testing of Dyrene is continuing on onions, celery and other crops, and Chemagro expects to apply for additional tolerances and uses as soon as additional residue information can be assembled. A limited quantity of Dyrene is now being made available to the commercial market through agricultural chemical dealers and distributors.

## BOUNTIFUL APPLE CROP

TRENTON, N.J.—The New Jersey crop reporting service reports that 3,100,000 bushels of apples were produced in the state in 1957, 20% more than the last 10-year average.

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